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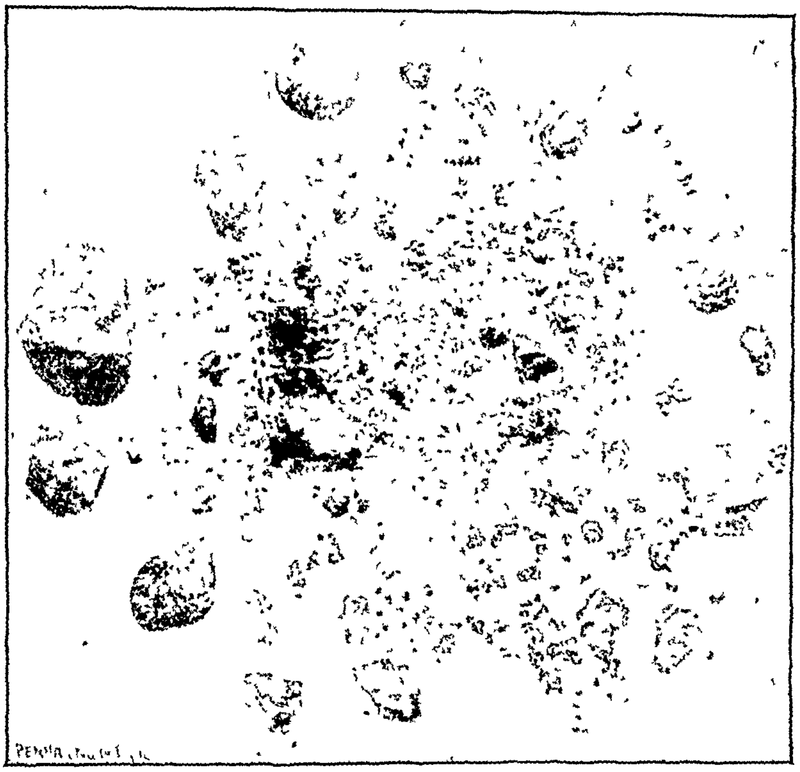
STONE IN THE BLADDER.

By J. J. Maxfield, M.D.

A year ago Mr. A., fifty-one years old, consulted me for an old standing and intractable cystitis as he supposed and had been informed by two physicians. I suggested an exploration and readily detected a stone. It was a large one, and it was so hard that you could hear the click of the instrument in any part of my office. I advised that he should have an operation performed, but as his brother had died after same operation a few years previously, he was afraid and refused to consent. In view to palliate, I ordered him to drink one quart of Buffalo Lithia Water every day. Washing out the bladder once a day with the same, warm, a careful attention to diet and bowels, with gentle tonics. This treatment was faithfully kept up for nine months when pus appeared in the urine and the operation could no longer be delayed. During the time he was under treatment, large quantities of débris came away, some of the pieces were so large that it was only by great effort that they were passed via urethra. None of these were saved. The day before the operation, on the twentieth day of June, I examined him again, and the stone did not seem so large nor was the click so pronounced, though we could tell that there was a stone present by the grating as from a rough body. On the twenty-first, I did the left lateral operation, and after getting into the bladder, I introduced the forceps, grasped the stone and pulling it away, I found it was like a mass of putty filled with sand. It was sacculated and there was a quantity of pus in the viscus. With forceps, gouge, curette and fingers I finally got it all away. No part of it was so hard but that it could not be crushed with very little effort between the fingers. After the fragments were allowed to dry they became hard.



The cut will illustrate better than I could tell how some of the mass looked, though a great deal of the finest particles were lost in the irrigation. It will be noticed that there were very few large pieces, and these were so soft that they would drop to pieces on the slightest provocation. This friable quality showed me *why* I did not get so pronounced a sound at my second examination, nine months after the first. Had I known before I operated what I knew afterward, I would not have done it, but with a lithrotite I would have crushed it and washed it out, though I believe firmly that if I had continued the treatment of the Buffalo Lithia Water a few weeks more the stone would have fallen to pieces. The outer segments were roughened showing the disintegrating action of the water in dissolving it. I believe the case is unique in every particular and shows the value of Buffalo Lithia Water so clearly that I thought it worth repeating. The patient made a complete recovery without an accident to mar it. The total weight of the pieces saved was 213 grains.—*The Prescription.*

Other Clinical Reports and Descriptive Pamphlet Sent Free.

THOMAS F. GOODE, PROPRIETOR,

BUFFALO LITHIA SPRINGS, VA.

The Journal of the
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ORIGINAL ARTICLES.

REMARKS INTRODUCTORY TO A DISCUSSION ON ACUTE DIFFUSE PERITONITIS,

Given before the New York State Medical Association, Oct. 28, 1891.

BY ALFRED L. CARROLL, M.D.,
OF NEW YORK.

Question 1. What does the normal histology of the peritoneum teach us of its physiological purpose?

The first question in our programme might have been not inaptly preceded by the inquiry, what is a "serous membrane?" and simple as the query sounds, there would be diversity of opinion in the answers to it; for neither in embryological origin, in apparent physiological use, nor in reaction to morbid processes, is there correspondence between all the textures which are grouped under this generic title. The epiblastic ocular chambers and aural labyrinths still hold their places in our text books, notwithstanding that the normal purpose of their contained fluids is rather to maintain separation of surfaces than to relieve friction. So, too, the single-layered, non-vascular arachnoid bears a very doubtful relationship to the thoracic and abdominal membranes in either its histology or its normal or morbid behavior. And when we find an instructor in a prominent medical school proclaiming that "The nasal mucous membrane is a serous membrane," interrogation is paralyzed, and all hope of definition is abandoned.

The similarity of the original structure of the pericardium, pleura, and peritoneum—with its offshoot, the tunica vaginalis testis, is taught by the embryology of the pleuro-peritoneal cavity, and confirmed by the fact that in sundry cases of arrested development two or more of these remain in intercommunication; and if in perfected evolution any differencing of such structure occur, it may be assumed to entail a difference of function. Of course, the consideration of structure here intended is not confined to the old anatomical description of a "serous membrane" as composed of a stratum of squamous cells superposed upon a "structureless basement membrane," but must include all tissues that are tributary to the purpose served.

All three of these sacs consist mainly of interwoven connective tissue bundles and elastic fibres, lined by endothelial cells, and of a "subserous" connective tissue layer of varying density wherein are contained such blood-vessels, nerves, and lymphatics as they may respectively possess; in all the parietal is thicker than the visceral layer, which is more or less intimately associated with the invested viscera; all are moistened by fluids, of the nature and mode of production of which the present state of our ignorance leaves us in troublous uncertainty. Once, a similitude to blood-serum gave the membranes their name; later, a nearer analogy to blood-plasma was discerned; and in both instances the physical phenomena of osmosis were invoked in explanation, the synovial sacs being drafted into a separate regiment because the viscidity given to their contents by "synovine" argued a secreting power of their endothelium—as if any living cells could refrain from modifying the character of the blood-constituents with which they have to deal; still later it has been asserted that the osmosed or secerned fluid is identical with lymph, with the somewhat important omission of the lymph-corpuscles, and our "serous membranes" are re-baptized as lymphatic sacs.

But beyond their general conformity, each has certain peculiarities. The external surface of the pericardium and the costal aspect of the pleura are covered by a tougher fibrous lamella than is found in the parietal peritoneum. The vascularity of the pericardium is shown, not only by normal anatomy, but by its "red velvet" appearance when acutely inflamed. The pleura, though in less degree, is well supplied with blood, especially in its pulmonary layer. Both have numerous nerve-filaments. Both seem—like the synoviæ and bursæ—to subserve in health principally the office of lubricating apposed surfaces in nearly constant motion.

Turning now to the peritoneum, the first difference that strikes the eye is in its mechanical distribution. While the only noteworthy pleural fold is the ligamentum latum pulmonis, a large part of the peritoneum is devoted to suspensory uses, or forms extravagant pouches; the ligaments of the liver, spleen, uterus; the mesenteries; the quadruplicature of the greater omentum, interposing an apron between the parietal and visceral layers and inclosing a separate cavity of its own; these and minor foldings and pockets give an enormous extent of endothelium, the stomata of which lead in most places to a loosely meshed connective tissue, rich in lymph-spaces and lymphatic vessels. Its blood-supply is scanty, its nerves few, and these chiefly in the omenta and mesenteries, the latter bearing the intestinal lymphatics and mesenteric glands. Many subserous lymphatics of the liver, especially those surrounding the gall-bladder, conduct to glands in the gastro-hepatic omentum; others, originating in the muscular coats of the hollow viscera, have been traced in the sub-peritoneal tissue. In short, the peritoneum offers a far more elaborate absorbent apparatus than any other of the membranous sacs, and to this its mere lubricating office is apparently subordinate. Experiments have demonstrated the rapidity with which injected liquids are imbibed, and the possibility of maintaining nutrition by this means.

In women, an additional channel of invasion exists in the Fallopian tubes, beside the communication of the lymphatics of the broad ligament with those of the uterine body, and the increase of the latter during pregnancy.

Question 2. Do pathological and clinical considerations warrant the separation of cases of acute diffuse peritonitis into different classes, some infective, others not so?

In a vast majority of cases of peritonitis the morbid process begins in the sub-peritoneal connective tissue of the visceral layer, the virtual continuity of which with the connective tissue stroma of the invested organs, and its lymph-spaces derivative from them, offer facilities for either direct extension of common inflammation or transference of septic products, thus affording ground for a distinction between at least two classes of pathic conditions secondary to local visceral disease. But in addition to these we have cases in which the inflammation is excited by mechanical or toxic agents operating immediately upon the peritoneum; others wherein it takes rise from lymphangitis or general septicæmia; still others, such as those sometimes called "idiopathic," of which the pathogeny is not always discoverable. Here, again, the grouping of infective and non-infective is pathologically and clinically manifest; but we know—without knowing exactly why—that, especially in what may be termed the surgical category, a case may occasionally transfer itself from the milder to the graver sort.

The effusion in peritonitis, as in pleuritis, may be plastic, sero-fibrinous, purulent, or ichorous; and the character of it seems to depend more upon the ætic factor than upon the intensity of the inflammatory process—of the real nature of which we know little or nothing. A mere adhesive film may be produced where vascular injection and subserous infiltration are marked; a profuse sero-fibrinous fluid may be poured out where at most an opalescence of the membrane is discernable; while in septic peritonitis, particularly in puerperæ, Rokitansky first called attention to the amount of toxic, disorganized exudates with hardly perceptible reddening or vascularity.

The plastic form is oftenest seen in peritonitis by extension of aseptic inflammation from subjacent organs or by "contusion," which, in view of the now notorious tolerance of pretty rough handling by the peritoneum, I am inclined to regard in most instances as nearly the same thing. The exudate may become organized into bands or more or less adherent layers of varying extent, or create papillary or dendritic roughenings of the surface, or its redundant cell elements may degenerate into pus, giving rise in some examples to a secondary infective process, in others remaining "laudable," to undergo fatty change and be absorbed, or, losing their liquid part, to be calcified.

The more abundant sero-fibrinous effusions, frequently observed in cases arising from exposure to cold and damp, from fæcal impaction, from strangulated hernia, etc., may, under favorable conditions and judicious treatment, be rapidly and completely absorbed, or, as in the preceding class, may result in adhesions, or even in suppuration.

Purulent peritonitis is common from mechanical or chemical irritants, or from putrid infection; as in perforation, rupture of the urinary bladder, operation for imperforate hymen after puberty, septic or supurative pelvic disease in women, etc., as well as from the above mentioned degeneration of more innocent exudates; and in children the proclivity to pus-formation in peritonitis is greater than in after life.

I shall not advert to the still waging controversy concerning the origin of pus and other cell-elements in these exudates farther than to say that the exclusive ascription of all of them to the migration of leucocytes does not seem to me to be sufficiently justified. The leucocytes in their origin are embryonic connective tissue cells, proceding apparently from the peripheral juncture of the two layers of the mesoblast. Even in mature life, according to our present uncertain doctrine, they are newly formed in the bone-marrow, spleen, and lymphatic glands, and probably in other unknown organic laboratories. All protoplasm, unhindered by a rigid limiting envelope, possesses, as far as comparative biology teaches us, amœboid movement; and I have yet to be convinced that "wandering" connective tissue corpuscles are necessarily lost leucocytes which have strayed from a distant intra-vascular home, or that new growth of connective tissue is essentially dependent on leucocytic emigration. Although pus corpuscles are unquestionably enfeebled, we have no positive authority for declaring that they are "dead leucocytes." In the case of peritonitis, particularly, the enlargement of the endothelia, the active subdivision of their nuclei, and the appearance of multitudes of new cells in their place, are noted by careful investigators. In fine, not much accurate progress has been made since Waller, nearly half a century ago, showed the impossibility of a scientific discrimination between the leucocyte, the pus corpuscle, the granulation cell, and, I would add, the primitive connective tissue corpuscle. It will also be noticed that I am not prepared to accept the "microbic" origin of all inflammation.

Question 3. What part do microörganisms, or the products of fermentation caused by them, play in the pathogeny of different forms of acute diffuse peritonitis?

As bio-chemistry has trodden on the heels of bacteriology, the intrinsic and immediate maleficence of particular "pathogenic" microphytes has been discussed with increasing skepticism, and we have learned that chemical products of their reaction upon an appropriate environment, or of their own decay, are the real morbific agents. Furthermore, there is reason to believe that the nature of the material on which they act is an essential factor in the property of the product, and Vaughan's experimental research confirms the opinion entertained by several observers, that microphytes differing in form and in susceptibility to staining reagents may cause the development of poisons similar, if not identical, in effect. Beside the alkaloidal ptomaines or "toxines," proteid substances or "toxalbumins" have also been isolated and their virulence demonstrated. According to Büchner, however, very few of these products are capable of exciting suppuration, which he attributes to what he calls "bacteria-proteins," arising from the plasma of the dying or decadent microphytes themselves, and chemically resembling the vegetable caseins.

We have learned, too, that without bacterial intervention toxic compounds may be formed within the body; that leucomaines are not only producible by perverted action of the living animal cells, but result from many of the physiological processes of metabolism; that the very peptones of normal digestion are poisonous if introduced directly into the circulation; that the misbehavior of our own tissue-elements, or the defective elimination of the waste-products of their activity, may do nearly as much mischief as an exogenous bacterial virus. Diminished resistance or degradation of the cells, moreover, facilitates microbial invasion and multiplication, and converts the patient, so to speak, into a "culture-medium."

Most of the infective forms of peritonitis are probably occasioned by the products of bacterial fermentation, and these products may apparently be elaborated by various saprophytic microörganisms. Examples are found in peritonitis from dirty penetrating wounds, from perforation or laceration permitting the ingress of fæcal or purulent matter, from entrance of decomposing material from the uterus and Fallopian tubes, from general septicæmia, etc. But there are cases presenting somewhat similar phenomena, which are perhaps attributable to endosomatic poisons, generated or accumulated in the disordered tissues. In intussusception or strangulation of any kind, in severe bruising without external wound or laceration, where circulatory disturbance leads to perversion of nutrition or to molecular necrosis, the conditions exist for incidental noxious synthesis.

The intense and rapidly diffused inflammation excited in numerous instances by intraperitoneal effusion of urine from rupture of the bladder through its serous investment, is not easily to be classified. On the one hand, normal urine, unexposed to air, is aseptic; on the other, none of its ordinary ingredients is known to be violently irritant; in fact, it is the ancient mariner's favorite collyrium for conjunctivitis. Even if the conversion of its urea into ammonium carbonate were chemically imaginable in these circumstances, the latter salt, in much stronger solution than is possible in urine, has been tested upon animals, by intravenous injection and otherwise, with only the temporary manifestation of its tetanizing influence. There is some evidence that urine may be absorbed by the peritoneum, and more that its prolonged presence in the serous sac does not always induce inflammation. Whether a septic ferment is imported, or a proteid or leucomainal poison concerned in such cases, is a problem for future bio-chemistry to solve.

Question 4. What are the means of differential diagnosis between various forms of acute diffuse peritonitis; and what the prognosis in each?

If we discard the too long misused adjective, "idiopathic," as applied to peritonitis, it is evident that diagnostic inquiry must often take a wide range to discover the originating disorder; and in some instances—such as those arising from incarceration, non-perforative implication in typhoid fever, nephritis, etc.,—the prognosis depends rather on the primary disease than on the peritoneal involvement. Even where peritonitis, *per se*, constitutes the principal peril to life, prognosis—as in other pathic conditions—is a variable term, changing with every advance of therapeutic art.

It is scarcely needful in addressing an audience of experienced physicians to remark that the early diagnosis of peritonitis is not always as facile as some writers represent it. Initial rigor and rapid rise of temperature are frequently absent, and when they do occur are commonest in cases caused by septicæmia or by exposure to cold; cases with totally opposite prognosis. Indeed, there are instances in which the whole course of the disease is nearly or quite afebrile, and others wherein the temperature may be subnormal. The pain and tenderness, ordinarily so characteristic, may in rare examples be trifling, as if the peritoneum retained its natural insensitiveness despite the inflammatory provocation. Nausea and vomiting are seldom inceptive symptoms, and may exist in other disorders, as in enteritis or intestinal occlusion, which are among the not infrequent causes of peritonitis; and constipation falls in the same category. Tympanites is an indication that inflammation and infiltration have already made much progress, and, in muscular patients, may not appear until near the end. Fluctuation is only discoverable where an abundant liquid exudation has taken place. Oliguria and dysuria are neither peculiar to peritonitis, nor are they so marked in this when exudation is slight and vomiting scanty or absent. An expert diagnostician may now and then find himself with little more than the physiognomy and decubitus of the patient to guide his first opinion. Granting that such cases are exceptional, it is nevertheless important to bear in mind their existence.

Still more difficult is it sometimes to determine when diffuse peritonitis supervenes upon preëxisting maladies or traumatism, where the symptoms of the primary lesion simulate or mask those of the secondary affection. As a rule [with not a few exceptions], the marked increase and unremitting character of pain; the change from restlessness to immobility and relaxation of the abdominal muscles, the rise of temperature, the quickening of the pulse, and the onset of vomiting [if not previously present], will furnish the earliest warnings. In many surgical cases, fortunately, this difficulty of diagnosis is of less moment, because the lesion itself justifies operative interference, which thus becomes prophylactic.

The rapid course of traumatic peritonitis renders its prognosis at all times very grave—worse if there be wound of the intestine or other abdominal viscus. In scarce instances, limiting adhesions may form a barrier of safety; but in others the exudation speedily assumes a sero-purulent or ichorous character, and life is soon extinct. Here, surgery should be occurrent against the coming ill, not awaiting its arrival.

Contusion in minor degree oftenest, probably, primarily affects an invested viscus, leading thence to a local peritonitis, which may become diffuse, as in other examples of extension from simple visceral inflammation. Sharp pain and tenderness do not appear until a considerable time—several days, even—after the accident, beginning at the injured point and gradually spreading. The exudate is ordinarily plastic or sero-fibrinous; the prognosis not unfavorable if the visceral inflammation be resolved. If severer contusion cause lesion of the peritoneum itself, the onset of inflammation is more sudden and the extension more rapid; the prognosis—especially if any hæmorrhage ensue—less hopeful. If crushing violence produce actual rupture of viscera—as of the stomach, intestine, liver, kidney, bladder—with effusion of blood, fæces, or other contents, the diagnosis of the fact, though not always of the seat of the solution of continuity, is generally self-evident; but it is well to remember the cases recorded from time to time since Bransby Cooper's day, in which the severest lesions of this kind were not immediately followed by any characteristic symptoms. The supervention of fatal peritonitis upon such hurts was almost inevitable before modern surgery with disinfectant methods gained courage to attack the causes; and even now the chances of recovery are small. The diagnosis of peritonitis in the very few instances arising from rupture of the spleen or of an aneurism has hitherto been made post-mortem, when prognosis had lost its interest as a question for practical consideration. Abscess usually can, and should, be detected and relieved before its rupture into the peritoneum.

Ulcerative perforation of the peritoneum commonly gives rise to a quickly diffused inflammation, following collapse induced by the accident, the symptoms being similar to those produced by rupture. If the perforation be small, and the intrusion of the contents of the digestive tract very scanty or gradual, limiting adhesions may form, or diffuse peritonitis may occur with few diagnostic indications of its advent. In most of these cases the determination of the exciting cause and of its situation must depend chiefly upon the recognition of pre-existing disease by the physician who has had previous charge of the patient; and every physician should be aware of the possible surgical outcome of a medical malady, and of the fatal mischief of delay when this possibility becomes an actuality.

Gastric ulcer occasionally, though seldom, may escape detection until perforation brings on a rapidly mortal peritonitis. Intestinal ulceration, on the other hand, is always difficult to diagnosticate in its earlier stages, and especially so when arising from uncommon causes. In malarial fevers accompanied by intestinal catarrh, ulceration or sloughing of the colonic glands, or even of Peyer's patches, may proceed to perforation, and the same result may take place in dysentery if the inflammation advance to suppurative disintegration of the muscular coat, the danger here, however, being foreshadowed by the markedly purulent character of the stools. Typhlitis with cæcal impaction—ordinarily of favorable prognosis—may possibly lead to perforative ulceration, as may also other mechanical obstructions. Perforation occurring as an incident of enteric fever hardly pertains to our discussion, since it is virtually irremediable by any present resources of our art.

The commonest source of perforative peritonitis is inflammation of that degrading reminder of our evolution from a herbivorous ancestry, the vermiform appendix, which, beside its direct attacks on the serous membrane, is at the bottom of about ninety per centum of the cases of perityphlitis. And the discovery of this condition is not always easy, for its course may be insidious, with normal temperature, little pain, absence of cæcal tumefaction, latency of all characteristic symptoms until the approach of death. I have seen a patient whose only apparent discomfort was obstinate constipation, without abdominal distention, with so little tenderness that he bore without inconvenience sufficiently deep palpation to detect slight thickening in the inguinal region and obscure fluctuation below, and yet incision revealed intense diffuse peritonitis with foul purulent exudation, the appendix perforated, and a fæcal concretion extruded.

Supposing that in cases of sudden onset, unheralded by prior ailment, the medical attendant has followed the stereotyped injunction to examine the ordinary hernial openings, the differential diagnosis of internal strangulations or occlusions is generally impossible except by exploratory section. Intussusception—commonly ileo-cæcal in youth—may be surmised from the local and often remitting nature of the initial pain and the accompanying dysenteric stools, and verified by palpation; but in the rarer instances where invagination occurs higher in the small intestine, the sense of touch is often baffled, and even if tumor be felt, its cause cannot be discriminated from other sources of occlusion. In all such cases, purulent, and sometimes gangrenous, peritonitis is likely to result, and more than in other classes is prognosis linked with prompt treatment.

Fæcal impaction may induce peritonitis attended with little, if any, rise of temperature, tympanites, or pain, and therefore apt to be overlooked in its earlier stage. In the majority of instances, however, it occurs in the cæcal region, and an intermediate typhlitis is discoverable. If the cause be removed, recovery is likely. In cases ensuing upon renal or cardiac lesions or severe constitutional disorders, the issue is dependent chiefly on the originating disease.

In women, the prophetic discrimination between infective and uninfective inflammation of the peritoneum is more important than in men, and often harder to achieve. At best, extension from pelvic peritonitis is of graver presage than that arising from simple affections of abdominal viscera, except, perhaps, in the comparatively benign form which sometimes follows exposure during menstruation, and which has been theoretically ascribed to the intervention of perimetritis. But since peritonitis, like pleuritis, is occasionally induced in men by subjection to cold and damp, it is not always necessary to imagine a distinctively sexual factor otherwise than as increasing susceptibility, save where the menstrual flow is intentionally arrested. Salpingitis as a cause of peritonitis has assumed great prominence of late, and is undoubtedly the intermediary in many infective examples, the fatality of which has been much reduced by gynecological progress; the frequency of gonorrhœal invasion through this channel, however, is unreasonably overrated, even by some of those who stop short of Noeggerath's extreme views. We know that the unmistakably specific vaginitis very seldom spreads above the os internum; daily experience shows that the reliquial discharge of gleet (and, *a fortiori*, any casual serous or mucous secretion long afterward) fails to convey specific virus; and the "gonococcus" (or its twin Dromio) is not confined to gonorrhœal pus. Sepsis from a retained portion of the ovum, or metritis from mechanical injury, may lead to peritonitis after abortion, as in the puerpera there may be different pathogenic grades, of widely varying significance, from simple metritis to putrid absorption or to the mysteriously overwhelming septicæmia which may kill before an exudate has formed.

During infancy, the prognosis of peritonitis, from whatever cause arising, is serious in inverse ratio to age. When consequent to infection from umbilical phlebitis or gangrene, within the first few weeks of life, a fatal termination is inevitable. This dangerous period past, the exciting factors differ little from those in adults, but the peril of the resulting peritonitis in itself is far greater.

In these prognostic hints the immediate outcome of acute inflammation only has been considered, the occasional transition into a chronic form not concerning our purpose.

Question 5. In what respects are the therapeutic indications in acute diffuse peritonitis modified by the etiological factors?

It can never be too often reiterated that, while the naming of a pathic condition is a provisional necessity for registration, the given title very rarely conveys a therapeutic indication; and in the case now under deliberation it would be small loss if the word, "peritonitis," were relegated to the limbo whereto are already consigned the terms, "dropsy" and "paralysis," the latter of which, by the bye, has been misconnected—nosographically, if not etymologically—with the tympanitic distention resulting from œdematous infiltration of the intestinal walls, not from interruption of innervation.

The tendency to hang the panoply of medication on the peg of nomenclature has led, in turn, to the vaunting of venesection, leeching, mercurialization, antimony, quinine, hot fomentations, cold baths or ice-bladders, as remedies for peritonitis; and to-day a therapeutic disputation weighs the opposing claims of "treatment" by opiates or by cathartics, either of which may be indicated or contraindicated in particular cases.

In instances resulting from wounds, visceral rupture or perforation, when intensity of pain immediately menaces the heart's function, morphia is temporarily useful; but where surgical measures are so imperatively demanded, farther reliance on its beneficial influence is to be deprecated; and, as in acute strangulations, few surgeons of the present day would delay operation until diffuse peritonitis declared itself. In intraperitoneal rupture of the bladder, lives were saved by suture of the vesical rent and ablution of the abdominal cavity in the early days of clean ventral surgery. In intussusception—granting that there are rare recoveries without peritonitis—the risk is so great that operation as soon as impaction becomes evident is preferable to waiting for the sloughing of half a yard or so of the intussusceptum, or wasting time with ponderous doses of quicksilver or rectal inflation with the kitchen bellows. Wherever, in fine, peritoneal inflammation is manifestly caused by penetrating or strangulating local lesion we should no more think of treatment directed to it alone than we should attempt to cure the inflammation produced by a splinter in the skin without removing the splinter. Another justification for operative intervention is the advent of purulent effusion; but here diagnosis is often at fault, since the chills and fluctuations of temperature ordinarily indicative of suppuration are not usually present. In all such surgical examples there is no longer need for the second alleged purpose of opiates; namely, to favor the formation of adhesions, or to secure their preservation by arresting peristaltic action.

But in other than surgical cases this bugbear of "peristalsis" is inconsistently dreaded; for when tympanites occurs peristalsis ceases. In peritonitis from non-perforative typhlitis or coprostatic obstruction elsewhere, continued constipation itself increases the chance of ulceration and possible perforation; and some of those who most oppose cathartics advocate in such conditions copious and oft-repeated enemata, which, if they act at all, must do so by exciting peristalsis. Small "persuasive" doses of calomel at an early stage will often happily prepare the way for slowly administered enemata; and opium, if used at all, should be limited to moderating pain. In cases of this sort less attention than it deserves has, I think, been given to belladonna, which deadens the sensibility of the nerve-endings and so allays pain and consequently diminishes reflex irritability, tends to relieve constipation, and supports the heart, embarrassed by pulmonary compression as well as by its own enfeeblement.

Opium, at all events in narcotic doses, is also contraindicated where nephritis exists; and, on account of its influence in lowering the already lessened respiratory oxygenation and retarding eliminative processes, is not rationally applicable to cases where peritonitis is an epiphenomenon of general septicæmia, and where pain rarely calls for an anodyne. In such cases, oftenest in puerperæ, fœtid diarrhœa commonly coexists; the bowel is freighted with putrescent matter, and mild cathartics and intestinal antiseptics are advisable rather than pharmacological peristaltic paralysis. The same argument obtains wherever decomposition or abnormal fermentation of the intestinal contents lends added danger to peritonitis, as in non-perforative dysentery, some forms of typhlitis, and other similar conditions. The relief of meteorism, by calomel [or probably by that portion of it converted into bichloride] was noted many years ago, and in the newer class of remedies represented by salol and resorcin we may find useful therapeutic agents in instances of this kind.

It is in "the early stage of peritonitis following operations" of abdominal section, according to Lawson Tait, that the threatened inflammation is most certainly arrested and a fatal issue averted by "the prompt use of the turpentine enema and the Seidlitz powder;" but in view of the obscure diagnosis of this "early stage" [no well-marked symptoms, beyond a rise of temperature, being often noticeable], I have wondered if some, at least, of these cases were not "fever of non-elimination," occasionally mistaken for septic infection. In other instances, as Dr. A. F. Currier has suggested, neglect to properly replace the omentum, or injury thereto in separating adhesions or otherwise, may be the starting point of peritonitis; but even here I believe that the chief reliance of gynecological operators is on saline cathartics. The farther discussion of this topic, however, I shall leave to those whose experience in evisceration is greater than mine.

Where purulent exudation is present or likely to occur, quinia, retarding leucocytic migration, is indicated; and its tonic and possibly antiseptic action may render it serviceable in other circumstances. In all instances where the "tendency to death" is by exhaustion, concentrated and easily assimilable nourishment, and stimulants when needed, are more valuable than drugs; and in the frequent virtual abolition of the function of the upper part of the digestive tract, we should not forget Anstie's rectal alimentation with strong meat broths, under which pain and vomiting are sometimes allayed, and the circulation strengthened.

In the uninfective forms of peritonitis, vascular derivation to the surface by turpentine stupes and light warm fomentations is more philosophical than the prolonged and depressing refrigeration by ice-coils recommended by some disciples of the German school. High pyrexia is rarely maintained long enough to require artificial abstraction of heat; on the contrary, if the issue become grave, a lowering of temperature is a common evil omen. This asthenic proclivity should also absolutely preclude cardiac depressants, such as antimony, aconite, veratrum viride, or the more mischievous group of "antipyretics" headed by the patented "antipyrine."

The clinical details of treatment in different classes of cases will surely be so thoroughly set forth by those who are to take part in the ensuing discussion that I shall not trespass further upon your time by adverting to them. My task has been accomplished if I have sufficiently emphasized the general proposition that the therapeutic indications are not only modified by, but altogether dependent on, the causative factors.

OPHTHALMIC SURGERY.

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He who would not be considered a bunglar in ophthalmic surgery must give the subject very careful attention. The mechanism of this branch of surgery is very fine and intricate and a large experience in its practice is necessary to surmount the various difficulties with which it is beset. It is both an art and a science. To practice it successfully as an art presupposes a great amount of training of the hand, and to practice it successfully as a science renders it an imperative necessity to be thoroughly and practically acquainted with the various diseases to which the eye is subject either directly or remotely. The complexity and the delicacy of structure of this organ render it extremely tolerant of surgical interference. The results sought to be obtained by a surgical interference with it are two-fold, surgical and optical. In a purely surgical sense an operation is said to be a success when it has been properly and skilfully executed, and the operator has done precisely what he set out to do, and the wound has successfully healed without having undergone any protracted or destructive inflammation. Thus its surgical success may be said to be an accomplished fact, but its optical success may be a total failure. For example, a cataract may be successfully removed, leaving the refracting media of the organ completely transparent without having produced any visual power by reason of the diseased condition of the retina and optic nerve, and hence the patient received no benefit from the operation.

With these prefatory observations I desire to call attention next to the means by which the various manipulations in eye surgery are to be accomplished. First I shall notice the hands with which the instruments are to be employed.

Physiologically speaking, the hands of the good operator must possess a high degree of *muscular sense;* *i. e.*, they must accurately feel and estimate the precise degree of force they exert in each and every direction. It is important that the hands possess the power of consentaneous movement, and be capable of simultaneous direction. They should act smoothly and harmoniously together as a single organ for the accomplishment of a common object. The operator should have both most completely at the command of his will. If he be right handed both his hands, so to speak, should be right hands, so that he can be perfectly indifferent as to which one he employs for the direction of cutting or other instruments. And last, but not least, his hands should be perfectly steady.

In a highly cultivated *muscular sense*, those essential qualities of precision and gentleness in the use of the force to be employed will always be at the operator's command. Occasionally it happens in doing an iridectomy, one of the most difficult operations properly to be done upon the human eye, that the reflex action of the superior rectus muscle rolls the globe upwards and carries the incision under the upper lid, which makes it impossible for the operator to seize the iris and draw out the piece he wishes to excise. It is under such circumstances that a competent assistant becomes necessary. I mean by a competent assistant, one whose *muscular sense* has been educated. To every competent and skilful operator it is very embarrassing to have an assistant with whom he is not acquainted, since if his *muscular sense* has not been sufficiently cultivated he will not infrequently grasp the conjunctiva with the fixation forceps too rudely and suddenly, and exert more traction than is necessary to overcome the contractile power of the superior rectus. By so doing there is danger of gaping the wound too much and thereby producing a prolapse of the vitreous, and perhaps even a dislocation of the lens. The force that is exercised gently is not necessarily slowly, but rather lightly in the beginning, and gradually increasing until the exact amount is exerted. The best example, perhaps, that is to be found of high *muscular sense* development is that which has been cultivated by the fine violin player. Who could listen to that celebrated violinist, Ovide Musin, who has on several occasions appeared before Saint Paul audiences, and held them in a bewildered astonishment or transported them into ecstacies of delight, without remarking his wonderful development of *muscular sense*, coupled with his almost phenomenal genius.

In most of the arts a highly cultivated *muscular sense* is an indispensable requisite to the artist.

The same principle that applies to the use of the fixation forceps is applicable in a greater degree, even, to the use of all cutting instruments when employed in and about the eye. In the use of a cutting instrument it should be placed upon the precise point desired to be penetrated and the force should be applied gently at first and increased in exact proportion to the resistance, but without any increase in the speed of the instrument, so that when the resistance ceases the instrument may stop or at most its movement be not in the least accelerated, and completely under the control of the operator. In the healthy cornea of the young greater force is required to penetrate it with a cutting instrument than frequently happens in that of the aged, whose cornea has perhaps become soft, thin and flabby from disease or age. An accutely developed *muscular sense* will at once detect the difference. If this difference is incapable of being appreciated by the operator, he might carelessly drive the point of his instrument into some part of the eyeball that would prove injurious, if not disastrous.

The great progress that has of late years been made in operative ophthalmic surgery renders the consentaneous movement of both hands almost an absolute necessity in order to practice it with propriety and success. The fixation forceps, for example, are used to steady the eyeball, or to move it against the edge of the cutting instrument. I have occasionally seen novices become almost unconscious of the use of the forceps and forget them to such an extent as either not to fix the ball with them or to make an undue or even a dangerous amount of pressure upon the ball. He would at the most critical moment seem to think he had but one hand, when conciousness should have been equally distributed to both.

I have seen very good operators who were not ambidextrous, either from their inability to acquire it or from a lack of painstaking training. The Germans instruct their pupils to stand in front of the patient when doing a cataract operation, while the English instruct them to stand behind the recumbent patient. To practice either method exclusively requires that one should be ambidextrous. Therefore, to avoid the labor of acquiring ambidexterity it is necessary to become accustomed to both methods. I think it is less awkward to stand behind the recumbent patient for operating upon either eye. To do this of course presupposes that the operator can use his left hand with the same facility as the right, since on account of the nose being in the way, it is necessary always to make the puncture in the globe from or at the temporal side. Therefore, in operating upon the right eye the right hand must be used, and on the left eye the left hand. The same training that enables one properly to use the fixation forceps with the left hand should enable him to use a cutting instrument sufficiently well with the same hand.

To the majority of persons the acquisition of ambidexterity would not be nearly so difficult as they frequently imagine were they to engage for a short time in the proper kind of training.

Writing and drawing with the right hand are undoubtedly the means by which it becomes educated to execute finer and more complicated manipulations than the left. To overcome the awkwardness of the left hand and to educate its *muscular sense*, practice drawing with it daily by the use of a pencil and paper until a curved line or a circle can be drawn with it as easily and accurately as with the right. Having accomplished this much, take a pencil in each hand and draw with each at the same time similar straight lines, curves, circles and angles, and in this way practice and cultivate the consentaneous movements of both. In the commencement it will be more or less difficult, like all beginnings. The left will be more limited in its movements and less graceful. It will be inclined to make the circles smaller and slower, the angles less accurate and the lines more crooked. Continue this practice from day to day, until the movements are as nearly alike as possible. Having mastered this step, take two fine steel pens of equal quality, one in each hand and practice in the same manner as with the pencils. By this means the degree of pressure can be readily determined by the thickness of the stroke. Practice this until the pressure with each hand is known to be the same. I found this to be the most difficult exercise in which to acquire a tolerable degree of proficiency, while some may find it the easiest. This demonstrates the sound principle that to master a complicated mechanical procedure it is better to learn it by piecemeal. Thus the boy, when he commences to play the violin, is first instructed to draw the bow across the open strings and at right angles to them for an hour or two each day, until he is enabled to produce a clear, full tone. He then commences to press the strings against the finger-board to produce other tones, and so on, from step to step, combining at the same time all he has previously learned.

After the hands have become accustomed to work together by practicing the drawing exercises with equal speed and force, the mask can next be taken up. With this one should first familiarize himself with the angles of the face in connection with the position of the hands in the various operations. The instruments to be employed should be held by the thumb and the two first fingers like a pen, while the remaining fingers and lower part of the hand should rest upon the brow the same as it rests upon the paper in writing. Let the position of the hand be such that the fulcrum will always rest in the same place, so that the movements may be made simply by extension and flexion of the fingers as in writing. This enables the learner to touch the nasal or the temporal side of the orbit without shifting the position of the hand, and to execute a lateral or sawing movement across the orbital space. After having practiced this for a considerable time, fill the orbits in the mask with some substance to represent the eyeballs. A wooden ball covered with some soft material, as white leather, will answer. Take a pen and ink and draw a circle around it to represent the sclero-corneal junction, then with the pen practice making fine dots around the outer edge of the represented cornea as near the line as may be without touching it, and at regular intervals. Practice this until the dots can be made with precision, accuracy and rapidity. The wooden balls may now be removed and the orbits filled with small rubber balls. Upon these practice puncturing with the needle and the cataract knife at or near the sclero-corneal junction, using the fixation forceps with which to steady them. Observe always and estimate as nearly as possible the degree of force required to puncture and incise, and the direction of the puncture. Finally fill the orbits of the mask with fresh hog eyes and perform upon these daily for a number of weeks all steps of the principal operations. Practice with the left hand more than with the right, so that both may act when necessary as one right hand.

Practice of this kind by the oculist is time well spent, for when he comes to the real work he will be regarded by his confrères as a skilful operator and by the laity as a man endowed with remarkable skill and superior mental powers, since what the people in general call genius has been, in nine hundred and ninety-nine times out of a thousand, the result of perseverance and painstaking industry.

It has been my lot more than once to see a blundering novice attempt to do an operation upon the human eye, when it was self-evident he knew almost next to nothing about the instruments he was handling. Such a spectacle is painful indeed, for it will be the merest accident if the poor trusting patient is not doomed to live the rest of his days in continual darkness. It is very expensive to our friends to recommend a novice of this kind, since his self reliance is not infrequently founded upon "cheek," "society hustling," and his capacity to drink hot punch and be a hale fellow well met, rather than upon knowledge and skilful manual dexterity. It is unfortunate for a community that such a man should be heartily endorsed as an oculist, as is frequently the case in some of our western towns and cities. Pardon me for emphasizing the fact that I have seen such would-be operators and have known them to close the door when their patient left their office, and remark to a near friend, "I made that patient pay my office rent to-day." The community that unwittingly furnishes their eyes in order to educate such a man is very unfortunate indeed, since he will prove himself to be an apt scholar if he does not ruin more than a bushel of their eyes in his blind shop before he becomes a tolerable operator.

Of the innumerable variety of instruments that have in bygone years been devised, I shall only refer in a general sense to a few of the useful ones. It would be a waste of time and space to attempt even a simple enumeration of those that are worthless and almost forgotten, the creations of some awkward and ignorant ophthalmic surgeon. I once saw a collection made by some crank in Vienna; they were more amusing than instructive to the student of ophthalmic science; they were the representatives of inventive awkwardness. They seemed to be devices for the purpose of bridging over those defects in the surgeon that should have been cured by perseverance and painstaking labor. They were, so to speak, dead instruments. The living instruments are made by the inventive genius of some skilful mechanician who had the keynote given him by some skilful surgeon. They do what the fingers alone cannot do or be spared to do. The fingers even of the skilful assistant could not in a cataract operation be trusted with the work of holding the lids apart, since they would not only be in the way, but would exert a dangerous pressure on the eyeball; therefore the stop speculum was devised.

The use and form of the various cutting instruments and blades of different shape, of hooks, iris forceps, etc., etc., require no special mention or demonstration. They should be adapted to the work they were designed to perform. I wish, however, to call attention to the scissors in the left hand, since here they require a special form of manipulation. The ordinary scissor is so constructed that when held in the right hand it is very easy to cause the edges to oppose each other by simply flexing the finger with which the upper blade is held. This same movement, when they are used by the left hand, draws the edges away from each other. To obviate this, pass the thumb into the upper loop and the ring finger into the lower; then bring the middle finger in front of the lower loop and make firm pressure while the index finger presses firmly against the lower blade in front of the joint. Held in this manner they will cut as evenly and well as when held in the right hand. The iridectomy scissors may be held in the right hand for either eye, but for strabismus operations on the left eye and for excising skin from the left eyelid, it can be performed with more neatness and dispatch with the scissors in the left hand.

It is proverbial for the bad workman to quarrel with his tools, and it is equally so with the bad surgeon, for he is always complaining about his instruments. The incompetent and awkward surgeon is always inventing or devising some instrument or means by which he may be able, as it were, to bridge over his own defects. His awkwardness and incompetency are frequently bringing him to grief, and the contrivances he devises with which to prevent in some degree his disasters, he calls an invention, and is proud of it, like those who "glory in their shame." Some time since I saw a very curious strabismus hook. It contained a small belly-shaped blade in the concavity of the hook. The blade was connected with the handle of the instrument by means of a delicate rod or slide. This enabled the operator, after hooking up the tendon, to give to the blade a sawing motion against the tendon till he secured it. This was either the contrivance of some bungling novice, or of some good mechanician who had been kindly trying to help the incompetent operator do one of the simplest and easiest operations in ophthalmic surgery. One who has skill enough to use a pair of scissors and an ordinary strabismus would have no use for such a device. Do not understand me to cast any reflections on such instruments as Beer's or Graefe's cataract knives, or on many other valuable instruments that are to be found daily in every good ophthalmic surgeon's armamentarium. They were men who were pioneers in ophthalmic surgery, and they were obliged to devise instruments that others have christened after the inventors because of their value and practicability. It may be said, however, that as a general rule, the surgeon who is always devising some new instrument is a bungling, unreliable operator. He will always have his peculiar scissors, his peculiar hook, his peculiar this and his peculiar that, and he will very ostentatiously christen them after himself. Should I ever be so unfortunate as to require an operation on my own eyes, I certainly should not select such a man, nor would I think of sending any one to him in whom I had the least personal interest. I should much prefer the one who has never invented an instrument of any kind, and has demonstrated to me that he can skilfully use such as have been devised for him by others. The good surgeon needs but few, well constructed instruments.

A word in regard to fixation forceps, of which there are two kinds; one with a rather blunt end when closed, and having but one tooth at nearly right angles on one blade, and on the opposing blade two similar teeth, between which the single tooth is received. The other contains but a single sharp, fine tooth on each blade, which project, say almost a half line beyond the body of the blade, and when the instrument is closed the teeth cross each other closely.

The former can be used on the young and healthy conjunctiva without breaking loose and lacerating the conjunctiva, which might happen at a critical moment. The latter will pierce the sclerotic, and is the one to be used when the conjunctiva is tender and brittle from age or a prolonged inflammation.

And last, but not least, for good operating an absolutely steady hand is an indispensable requisite. The good practical surgeon marks out all the various steps of the operation before commencing; in other words, he performs the operation mentally. This is especially applicable to eye surgery, and the operator should not deviate the smallest fraction from his previously determined course. After making the incision, he may desire to introduce between the lips of the wound a blunt instrument, a hook, a closed forcep or some other instrument, and if his hand is unsteady, he will be most certain to bruise the surrounding delicate parts, and cause an escape of vitreous perhaps, or a premature loss of aqueous. Steadiness is a physical attainment, and may be acquired by proper training. There is, however, an unsteadiness that results from mental causes. The over-anxiety to do right results from a want of confidence or self-reliance, and can only be cured or remedied by the growth of confidence and the gradual influence of success.

138 East Sixth St.

IT IS said that the chemist of the New York Board of Health has discovered one thousand and forty-five specific nuisances on the Croton water-shed, whence comes the water supply of New York city.

ELECTRICITY AS A THERAPEUTICAL AGENT IN THE TREATMENT OF HYPERÆMIA AND CONGESTION OF THE PULP AND PERIDENTAL MEMBRANE.

BY JOHN S. MARSHALL, M.D.,
ORAL SURGEON ST. LUKE'S FREE HOSPITAL AND MERCY HOSPITAL, CHICAGO, ILL.[1]

Electro-therapeutics in medicine and surgery has been developed to a considerable degree, and may be said to form a very large and important element in the treatment of certain forms of disease, while in dental surgery it has received but little attention; in fact, it is almost a negative quantity in dental literature.

Its application, however, in dental surgery, does not offer so broad a field for investigation, yet a study of its value as a remedial agent will be no less interesting than in other special departments of medicine, and when better understood will, I believe, become an important adjunct to the means already at our command for the treatment of a considerable number of dental and oral diseases.

I have chosen as the topic of this paper, two out of several pathological conditions of the teeth to which the various forms of treatment by electricity may be beneficially applied. The choice has been governed by a desire to present forms of disease upon which these beneficial results could be most easily and certainly demonstrated.

An exhaustive treatment of the subject at this time and place will be out of the question. I shall, therefore, refrain from generalities, and place my subject before you in outline only, leaving your good sense and experience with disease to fill in the details.

Hyperæmia and congestion of the dental pulp from caries, thermal shock, chemical and mechanical irritants, and traumatic injuries, etc., resulting in odontalgia, are among the most common of the diseased conditions found in the oral cavity, and many times the most difficult to control by the methods of treatment usually adopted, without devitalization of the pulp.

Hyperæmia and congestion of the peridental membrane from constitutional causes, such as rheumatism, gout and pregnancy, and certain local causes, like excessive malleting, undue wedging, change of position of the teeth in regulating, and other surgical or traumatic injuries, resulting in severe pain, is many times quite as difficult to control.

These forms of disease will best serve our purpose in this attempt to demonstrate the therapeutical value of electrical and galvanic currents in the treatment of local disorders of the oral cavity. The object, of course, in the treatment of these forms of disease is, in the first class, to relieve the congested condition of the blood-vessels and to preserve the vitality of the pulp; in the other, to arrest the inflammatory symptoms short of the suppurative process or of the formation of adventitious tissue.

How these much to be desired conditions can be obtained, is a question that has often troubled the mind of the thoughtful dentist, and while I do not claim to have made any new discovery, I am confident that the galvanic current, if judiciously used, will prove to be a valuable aid in the treatment of all forms of inflammation of the pulp and peridental membrane, and many other conditions which further experience and experiment will demonstrate.

It is a generally known fact to medical electricians, that local hyperæmia and anæmia can be produced at will by the influence of the negative and positive currents of electricity; and that resorption of certain inflammatory products and new growths can be promoted through their stimulating effect upon the absorbent organs.

It was the knowledge of these facts which led me to investigate the value of the application of these principles to the treatment of congestive conditions of the dental pulp and peridental membrane.

The first case upon which I attempted to demonstrate these principles, which will serve as a good illustration, was a tooth in my own mouth, the history of which is as follows: The right first superior bicuspid had been filled with gold at the age of 20 years, but from poor manipulation had been refilled several times during the next fourteen years. Ten years ago the last of these fillings came out, leaving a large disto-approximal cavity, and the pulp nearly exposed. The tooth was exceedingly sensitive to the slightest thermal changes, to acids or sweets; it was therefore plugged with Hill's stopping. Six years ago this filling was removed with the hope of introducing gold, but the tooth was in such a sensitive condition as to seem unwise to introduce a gold plug; oxy-phosphate cement was therefore substituted. During the following night there were developed marked evidences of a congestive condition of the pulp. The next morning the phosphate filling was removed, and the cavity dressed with oil of cloves, and a solution of gutta-percha in chloroform was flowed over the bottom of the cavity, and refilled with oxy-phosphate cement. The symptoms, however, did not abate, but gradually increased in severity. I therefore determined to try the depleting effect of the positive galvanic current, and called upon my friend, Dr. Justin Hayes, of Chicago, with the request that this line of treatment might be thoroughly tried. The positive pole of the continuous galvanic current was applied to the tooth, and the negative pole to the carotid triangle of the neck on the same side. The strength of the current was graduated to my ability to bear it without discomfort, and the poles were allowed to remain in position for about half an hour. At the end of ten minutes there was a marked improvement in the symptoms, and at the end of the half hour all discomfort in the tooth had disappeared. During the following night the tooth again became uneasy, but a second treatment of twenty minutes the next morning completely relieved it, and from that time on, the tooth has caused me no annoyance. Three years ago the tooth was filled with gold at a clinic, by Dr. Roscoe F. Ludwig, at the International Medical Congress held at Washington, D. C. The pulp is still vital, but is no more susceptible to irritating influences than any other tooth in my mouth.

The marked success which followed the treatment of this tooth has led me to adopt the same treatment in several similar cases, all but one of which have responded to my entire satisfaction. This case was one in which there was not much hope of the treatment proving successful, yet it was tried as a forlorn hope. This history is briefly as follows: Miss J. E aged 20, of frail, delicate organization, fair healt had been under treatment one year previously f protrusion of the superior anterior teeth. The operation had been performed slowly and with great care, to avoid serious irritation of the dental tissues and alveolar processes, and the final retaining plates had been worn for about six months. About this time a slight discoloration near the gum of the right superior central was discovered. She came in great haste to know why this should occur. There had been no pain in the tooth, and there was no soreness to percussion; it was slightly sensitive to heat and cold, but this symptom was not so marked as in the adjoining teeth. My diagnosis was either passive congestion of the pulp, induced by the irritation in moving the teeth, or the formation of an embolus in the pulp vessels. Which it was I was unable to decide, and as there seemed to be no hope of saving the vitality of the pulp by the ordinary methods of treatment, the positive galvanic current was applied. In the treatment of this case, I called in council Dr. Plymon Hayes, of Chicago. On the application of the current to the neighboring teeth, three-fourths of a milliampère was all that could be comfortably borne, while the diseased tooth would bear just double this amount. This was due to the impaired vitality of the pulp. Daily treatments of twenty minutes each were maintained for a week; during the first three days there was a slight increase in the sensation of the tooth under the current, and the strength was reduced to one milliampère; after this, however, sensation seemed to grow gradually less, the current being increased to three milliampères without unpleasant response; the treatment was therefore abandoned, the tooth tapped and the pulp removed, and the case treated by the usual methods.

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[1] Read before the American Dental Association, at Saratoga Springs, N.Y., Aug., 1891.

In the treatment of pericementitis not caused by septic poisoning from a devitalized pulp, it is, many times, of very great benefit. In these cases the positive pole should be applied to the gum over the roots of the affected tooth. Marked relief is often experienced in a few minutes, and often entirely relieved after three or four applications.

In a former paper, published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 1889, I have called attention to the prevalence of hyperæmic odontalgia frequently accompanying pregnancy, as a result of impeded circulation in the lower extremities, and thereby causing general hyperæmia of the upper half of the body. The general treatment suggested in that class of cases was rest in the recumbent position and anodynes. I would now suggest as an additional treatment the local application to the affected teeth of the positive galvanic current.

With regard to the strength of the current, experience proves that from three-fourths to one and a half milliampères is sufficient in the class of cases so far mentioned, while the frequency of the sittings will depend upon the severity of the local symptoms and the nervous susceptibility of the individual.

As a rule, one treatment in twenty-four hours is all that will be required; in aggravated cases, two, and occasionally three, may be advisable, the duration of the sittings being from fifteen to thirty minutes.

As a means of diagnosis in obscure cases of the vitality or non-vitality of the dental pulp, I know of nothing so sure to demonstrate to a positive certainty these conditions as the electrical currents, both the galvanic and the faradic. In the more obscure cases, however, the faradic is superior to the galvanic, for if there is the slightest vitality remaining in the pulp it will demonstrate it instantly by causing a response in the tooth. It is superior in this respect to the transmission of light by the electric mouth-lamp, for many times when the condition is upon the border line between the life and death of the pulp, the electric light fails to satisfactorily demonstrate the condition.

I also believe that the electric currents will serve to demonstrate the presence of low grades of inflammation of the tooth pulp so often the cause of various forms of neuralgic conditions of the face and head. The faradic current especially, if applied in such cases, will demonstrate a hyper-sensitive condition of the tooth pulp. In order to locate the tooth causing the neuralgia, it will be necessary to apply the current to each individual tooth; the diseased one will give more active response to the current than will the healthy teeth; in other words, the diseased tooth will not bear so strong a current as will the healthy ones, hence the importance of using the milliampère metre for measuring the exact strength of the current.

The value of the current in the treatment of neuralgia, paralysis, atrophy of muscles, chronic indurations, tumors and various other conditions there is not time to detail; we shall therefore leave the matter here, feeling that we have offered a sufficient number of suggestions to stimulate investigation as to the value of electro-therapeutical treatment in the class of cases which have formed the especial topic of this paper.

The battery and the electrode which I use were made for me by the McIntosh Battery and Optical Company of Chicago.

No. 9 Jackson Street.

THE PREVENTION OF COLDS, AND THEIR SEQUELÆ, BY SURGICAL METHODS.

Read before the South Carolina Medical Association, June 9, 1891,

BY W. PEYRE PORCHER, M.D.,

CHARLESTON, S. C.

There is, perhaps, no class of diseases to which humanity is more subject than rhinitis, or common coryza, nor are there any to which less attention is paid, and perhaps not any of which less knowledge is had of their true character and proper treatment. It is apparent that the larynx and bronchi soon give way to frequent inroads of these attacks.

In the simplest inquiry into the functions of the nose as a breathing organ, we find that the mucous membrane covering the turbinated bones is composed of erectile tissue, styled by Bigelow, of Boston, the turbinated corpora cavernosa. It is composed of large venus sinuses, which can be suddenly filled by the capillaries which open abruptly into them, causing distention and erection.

This arrangement, in combination with the vibrissæ and ciliated epithelia, serves the two-fold purpose of acting as a guard against the entrance of cold, draughty air, particles of dust or other extraneous matter, and at the same time as a strainer for the twelve to sixteen ounces of fluid which is daily excreted to purify and moisten the air before its introduction into the larynx. This fact is well established by all authorities.

Frequent or repeated distensions or inflammatory attacks on a membrane of such an erectile character not only produce hypertrophic degeneration by adventitious connective tissue formation, but, in addition to this, and of almost inexplicable frequency, we find either a deflection or deviation of the septum from its normal position, or else an exostosis; or, more commonly still, an ecchondrosis or cartilaginous spur projecting from the surface of the septum, and in many instances penetrating into the inner turbinate, or forming a bridge entirely across the nostril.

So frequently do these growths occur, and so entirely unconscious are the individuals of their presence in the nose that, were it not for the absolute certainty of the ill effects resulting from allowing them to remain, and the great benefit derived from their removal, one would almost be inclined to act according to the motto of, "Where ignorance is bliss," etc., and leave them untouched. We immediately ask ourselves, however, what might we naturally expect from the presence of such a growth, or what would result if no surgical interference were instituted? Why, of course, a narrowing of the calibre or lumen of the nostril is caused, and the space allowed for the turgescence of the turbinated corpora cavernosa is diminished, and, being so diminished, the slightest draught or exposure serves to cause sufficient swelling to completely occlude the nostril; and a sense of stuffiness or cold in the head, with all its attendant evils, constitutional symptoms, mouth breathing, etc., is felt.

2. The normal passage of air being prevented, all the ℥xvi of fluid above alluded to is retained until it becomes inspissated and acrid, and causes submucous infiltration of the membrane covering the septum *and turbinated bones. A portion trickles down the* pharynx, and irritates the larynx to such an extent that violent hawking and coughing has to be resorted to in the effort to clear the throat of its presence.

This condition is thought by many authorities to constitute one of the *most common forms* of chronic nasal catarrh.

Under exposure to cold or sudden changes, the pressure of the contiguous surfaces will be greatly increased, forming an inflammatory center from which many reflex phenomena occur, viz., cough, asthma, headache, vertigo, sneezing, etc.

Dr. Charles R. Weed, of Utica, N. Y., speaking of hypertrophic rhinitis, says:

"Resulting from these conditions, and the most frequent of all troubles, is, first, deafness from pressure upon and occlusion of the Eustachian apertures; next, neoplasms of various kinds, polypi, ulcers, etc.; pharyngeal disease, with its various conditions; laryngeal disease, resulting from the constant irritation produced by the dropping into the throat of the retained post-nasal secretions and the hawking process to dislodge them, often resulting in a catarrhal laryngitis, and ultimately in consumption. Asthma is a very frequent sequela. Schmiegelow, of Copenhagen, in an essay published in London this year, places the cases of asthma caused by nasal diseases at about 10 per cent. in males and 6 per cent. in females, and the cases tabulated, without exception, were cured by the result of proper treatment of the nasal passages. Hack, in his work published in 1884, although exaggerating the reflex conditions arising from hypertrophies, is nevertheless entitled to the credit of being really the first rhinologist to establish that asthma resulting from the hypertrophy of the turbinated bodies is a fact. Woolen says that asthma is especially due to hypertrophy of the posterior tips of the inferior turbinated bones, and occasionally of the middle ones, which either touch the septum or curl on themselves and touch the outer wall of the nose. This same writer considers hypertrophy of the anterior tips the essential local factor of hay fever, while in our own country, such men as Roe, of Rochester, Daly, of Pittsburgh, Sajous, of Philadelphia, and Bosworth, of New York, all agree with the foreign authorities just quoted. Hay fever, with its distressing symptoms, and even aphonia, caused, in my opinion, by a nervous reflex condition in persons of a highly sensitive nature, is another of the ills following these hypertrophic conditions. Cough, in some cases, is certainly from the same source. Vertigo is often present, and even epileptiform convulsions have been reported, though rarely, as arising from these hypertrophic conditions, while supra-orbital neuralgia, diffuse headache and migraine almost invariably have their origin from nasal obstruction. I mention these diseases as being the *most commonly* complained of by patients suffering from hypertrophies. Of course, there are probably others more complex in character that we may be able to trace to the same origin, but, being rare, are naturally overlooked, and my time forbids a more extended research into them. I might add that Guye, of Amsterdam, Holland, finds aprosexia (inability to fix the attention) occurring mostly in young persons and especially would-be students—a condition due to nasal obstruction and hypertrophy, while Hill, of London, also tabulates a number of cases from this cause."

Many diseases of the ear through the Eustachian tube are directly attributable to and dependent on such growths in the nose and adenoid hypertrophy of the vault of the pharynx. Sir Morrel McKenzie says: "The middle ear may be considered as an accessory cavity to the nasal cavity, not only during the act of deglutition, but also during quiet respiration, and this has been proven by experiment. An obstruction in the nasal cavity interfering with the admission of air to the middle ear, will cause an inward collapse of the drum, then follows congestion, then an exudation of serum, and then otorrhœa—so frequent is the otorrhœa of young children dependent on nasal obstruction, that if one was brought to him suffering with an otorrhœa, or was a mouth breather, he would in nearly every case without any preliminary examination introduce the forceps into the naso-pharynx and bring out a piece of adenoid tissue. Nasal obstruction by adenoid vegetation, or otherwise in young children, interferes so materially with their development that if not corrected in early life, it may mean irremediable condition in after life. In fact it may be considered as axiomatic, that free breathing through the nose is absolutely essential to physiological life."

Dr. Jno. McKenzie, of Baltimore, emphasizes the statement, "that inflammatory troubles of the middle ear are frequently dependent on nasal obstruction. The irritation caused by the obstruction induces an inflammatory condition of the naso-pharynx. This continued inflammation will cause a fatty degeneration of the tensor palati muscle and the Eustachian tube will not be acted upon, thus involving the middle ear. Of course, the walls of the Eustachians are in contact, in a state of rest, like the walls of the vagina for instance, but that air is admitted into the middle ear during quiet respiration has been proved by experiment in Germany."

Nasal obstruction is also the cause of far more eye troubles than is generally supposed. Notably trachoma, pseudo erysipelas of the lids, conjunctivitis, both hyperæmic and phlyctenular, keratitis, etc. Only recently the report of a remarkable case appeared in the New York Medical Record, of "Convergent squint corrected by Adams' modified operation for deflected septum."

A brief résumé of this case is as follows: "A boy aged 12 fell from a height 10 years before and struck on the bridge of his nose. From that time the boy's eye was turned to his nose, and the nose bent in an opposite direction. The strabismus was of so exaggerated a type, that the cornea of left eye seemed almost in contact with the inner canthus of the orbit. The voice was high-pitched and decidedly nasal in tone, giving evidence of a continual strain of the vocal muscles. He saw always double and experienced a feeling as if the affected side of his face were drawn to the opposite side. Examination showed that the left nostril was so much occluded by the deflected septum that a probe could scarcely be passed. An opening was made under a 20 per cent. solution of cocaine and the septum fractured by Adam's punch and replaced in position. The operation was painless and loss of blood not more than a teaspoonful. Goodwillie's nasal tubes were introduced and the nose packed with cotton soaked with Dobell's solution; result: the hitherto "hideously crossed eye boy was converted into a smiling boy with straight eyes and a *straight nose.*"

The next point to which I would ask your attention is one the importance of which in my opinion should not be overlooked, namely, the dependence which exists of almost all the functions of the larynx upon what I would term "pharyngeal competency." I regard the relations of the pharynx to the larynx in almost the same light as I do the driving wheel of an engine to the engine itself, or to speak more plainly, I believe that the pharynx is the great lubricator of the larynx, which almost absolutely controls the clearness of the voice. The majority of aphonic cases are in my opinion produced by pharyngeal incompetency, and this in turn by nasal incompetency, and therefore it is a matter of continual surprise to me that the profession seem to attach so little importance to those ever-excreting organs, the pharygeal glands.

Why do they always wait for a cavity to form in the lungs before attempting to account for the origin of the mass of sputa which has been pouring out ever since the cough began? It will not be disputed that the causes of a cough are many and various, and are by no means confined to acute or chronic inflammations of the lungs, pleuræ or bronchi. Is it not then reasonable that we should not, as heretofore, wait for a cough to become loose, as the expression goes, while the larynx, bronchi, and lung tissues are becoming daily more disorganized, but rather to exert every effort to cut off the early source of the discharge, viz.: in the nose and naso-pharynx.

I now reach the most important part of this paper, viz.: How nasal obstruction and occlusion should best be relieved. On account of the great density of the tissues the lumen of the nostril can only be restored by the free use of the knife, saw, or galvano-cautery, the punch, chisel, wire snare or chemical acid, and the forcible removal of all obstructions—be they bony, cartilaginous or membranous. In my hands the nasal trephine driven by the C. & C., or challenge motor, has proved of invaluable assistance. Next to these I have used Dr. Bosworth's nasal saws and the galvano-cautery itself, or the hot wire snare. Many of the growths however are indurated in character, and having a bony substratum, their total removal becomes a matter of repeated attempts, and success is only then achieved by the aid of the most powerful and effective appliances. In conclusion, it is not necessary for me to say more than that experience has taught me that nothing but good results come from the restoration of the lumen of the nostrils to their normal calibre, as shown by cases published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Sept. 19, 1890, and the transactions of the South Carolina Medical Association, September 23, 1889; in which patients who had not only been subject to an unusual amount of coryza, but who showed all the symptoms of the ill effects of obstructed nostrils, difficult respiration, etc., from adenoid hypertrophy in the vault of the pharynx, ecchondromata, etc., passed for months and years after the removal of such growths with material if not complete relief from the recurrence of the naso-pharyngeal inflammation.

4 George St., Charleston, S. C.

NOTE.—Since writing the above I learn that to Dr. W. H. Daly, of Pittsburg, Pa., is due the credit of having first pointed out the relation of the nasal and neurotic factors in the causation of asthma in an article on that subject which he published in 1881.

BOOK REVIEWS.

TEXT-BOOK OF ANATOMY. By H. C. BOENNING, M.D., Lecturer on Anatomy and Surgery in the Philadelphia School of Anatomy. Published by F. A. Davis.

This is an excellent practical treatise on Anatomy, particularly for the student. It is a good working compend of the subject, and has sufficient illustrations to make the subject matter clear and practical. It is an excellent work *for the director to have at hand during his work.*

HYDATID DISEASE. IN ITS CLINICAL ASPECTS. By JAMES GRAHAM, A.M., M.D. Illustrated with 34 colored plates. Published by J. B. Lippincott, Philadelphia.

This work probably is the most complete treatise extant, upon the diseases produced by the evolution of the embryonic echinococcus. It will prove of great value to the student and pathological investigator who seek for comprehensive and accurate data upon this exceedingly interesting subject. The plates are accurate, well executed, and exquisitely colored. The author inclines to favor the method of free incision, in the treatment of accessible hydatids. He does not particularly favor electricity.

A MANUAL OF VENEREAL DISEASES. BY E. M. CULVER, M.D., and J. R. HAYDON, M.D.

In this little manual, a short practical outline of the subjects within its scope is presented. The book is well illustrated and will prove very serviceable to the student, who has little time for study of the larger and more comprehensive works.

The book is published by Henry C. Lea, of Philadelphia, and it is hardly necessary to state that it is a well made and neat little volume.

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SATURDAY, JANUARY 2, 1892.

PUERPERAL POISONS.

Death in child-bed is justly regarded with special horror. And of all these deaths, those arising from septic influences are particularly unfortunate. The subject of puerperal septicæmia was recently discussed before the British Gynecological Society,[1] with the result of eliciting some very diverse views upon the subject.

Prof. Oliver, of the University of Durham, stated that within a period of eighteen months, he had seen twenty-five cases of puerperal septicæmia in Newcastle and the immediate district. So great a number of cases had given rise to the suspicion of an epidemic influence. Once or twice he had seen three fresh cases in ten days, in the practice of different medical men, with no other cases in their hands then or since, and all in different parts of the town or neighborhood. The largest number of cases were seen in December and April. Dr. Oliver was of the opinion that puerperal septicæmia was not a specific process; but could be produced by poisons from various diseases. He apparently showed that a single case of gonorrhœa was the cause of three cases; an exanthematous fever of another, and a carbuncle of still another.

Dr. Oliver's observations favor the view, so generally held at present, that puerperal septicæmia results from various poisons introduced from without, usually by way of the genital tract, and always in the shape of microörganisms. This is the view which has led logically to the introduction of the strictest aseptic and antiseptic procedures in the management of puerperal cases, and which has led some advanced bacteriologists to assert that the death of a woman from puerperal sepsis, where the strictest aseptic and antiseptic precautions had not been employed, was the equivalent of malpractice on the part of the attending physician.

If this proposition be true, it seems justifiable to conclude that a fair corollary would be, that cases treated without these specific attentions must necessarily result in a large number of cases of puerperal septicæmia, and consequently a large mortality.

On the other side of the question, Dr. Dolan, of Halifax, appeared, and apologized for taking part in a discussion on puerperal septicæmia, as his experience of the disease had been small. In a practice of twenty-five years he had had but two cases of this disease, but he had attended 3,453 confinement cases. During this time he had never shaved off the pubic hair, or washed the vulva with carbolic acid, or given carbolic injections, or treated the uterus as an important wound after delivery. Is it not fair to suppose, that if he had always used injections of corrosive sublimate, he would have had a larger number of deaths from poisoning by this agent, than he actually did have from puerperal sepsis?

The contribution to this subject by Dr. Hiram Corson, of Pennsylvania, at the last meeting of the Association, is of the highest importance. Dr. Corson practiced medicine from 1828 to 1888, and in this time attended 3,036 confinements.

Of his earlier work in obstetrics, Dr. Corson says: "I had attended a good many cases, and had often, on my after visits, been met, on entering the room, by an odor recognized as that of putrid blood, and so offensive it was unpleasant to remain there. I spoke of it to the nurses, but they said it was always so, and as I was a mere boy, when compared with the venerable matrons who, in those days, ministered to the lying-in women, who were so neat and clean in their own persons, I concluded that the 'cloth' had perhaps remained there too long, and that its removal would do away with the fetor; so gave directions to have a fresh one applied, and went away. So things went on in most of the cases for a year or two. As a general thing the fetor was very evident for a week or more, and finally was so bad in one case, that I determined to see what condition the patient was in; when lo! I found that she had not had a single washing of the genitals and contiguous parts, or a removal of the soiled clothes since the end of the labor, though a whole week had elapsed." He was informed by the nurse that this was the usual custom, and yet puerperal fever did not occur. In cases of threatened abortion it was his custom to tampon the vagina, to remove the tampon daily and insert a fresh one, or soak the old one in vinegar, and replace it. We can readily believe him when he says that he knows of nothing more offensive than the sponges and putrid blood which he would remove from the vagina, and yet in all his sixty years of practice, he never had one of these patients develop puerperal fever, or peritonitis, or any other fatal affliction of the pelvic organs.

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[1] British Gynecological Journal, Vol. vii, p. 301.

Such evidence as this is not negative, in the present state of our knowledge. All the conditions for sepsis, as we understand them, were present, and yet sepsis did not occur. The experience is too vast to be merely accidental. But do we really know all the conditions for sepsis? He frequently went from small pox, scarlet fever, erysipelas, and in one case even puerperal fever, to confinement cases without damage to the women. Prof. Trail Green, of Easton, Pennsylvania, who has practiced for fifty years, writes Dr. Corson: "Have been so happy as to have no case of puerperal fever, and I think it has been very rare in the practice of fellow practitioners." Another friend of thirty-five years' practice had never had a fatal case of puerperal disease. Dr. Wilson, of his county, had never lost a woman in over one thousand confinements. Dr. D. Colvin, of Clyde, N. Y., never used antiseptics, and in 1,279 cases of confinement, lost but one woman, and she died immediately after the removal of the placenta. No antiseptics were used in any of the following cases:

Dr. D. Colvin.	1,279 cases,	1 death.
Dr. Kemper, ...	900 "	2 deaths.
Dr. J. T. Chenowith, ...	1,600 "	1 "
Dr. N. T. Chenowith, ...	708 "	2 "
Dr. A. H. Farquar, ...	500 "	2 "
Dr. Thos. Botkin, ...	525 "	5 "
Dr. J. S. Blair, ...	419 "	2 "
Dr. Wm. F. Mitchell, ...	700 "	1 "
Total, ...	6,631	16

All of these deaths were not septic, and yet the whole mortality was less than three-tenths of one per cent.

It is generally conceded that the mortality in lying-in institutions has been materially reduced by the modern methods of aseptic midwifery. The diminished mortality is a fact. Its explanation is not necessarily correct. Dr. Dolan states that the mortality of the British Lying-in Hospital from 1779 to 1790 was only 3.2 per thousand. In 1790 Clarke purified his wards and then attended 960 women with only three deaths. It is very evident that much more remains to be done before the complete etiology of puerperal sepsis shall be known, and a rational practice based upon this etiology established.

"A CITY OF NOBLE CHARITIES."

At the recent opening of the new addition to the New York Orthopædic Hospital "flowers and enthusiasm bloomed." Among the addresses delivered on that occasion was one by Dr. T. Gaillard Thomas, who took for his theme the humane sentiment and generous gifts which are flowing constantly in New York in behalf of the crippled and helpless of every name and nature—a work that abundantly warrants the giving to the metropolis the title of "City of Noble Charities." The value of the gifts lately received by the Orthopædic Hospital approximates $50.000. A nucleus has been formed for the establishment of a summer branch in Astoria, on Long Island.

DIFFICULTIES ENCOUNTERED IN HEPATIC SURGERY FROM FRIABILITY OF CHOLEDOCHAL STRUCTURES. SOME RECENT ADVANCES AND IMPROVEMENTS.

The surgeon of to-day who launches his bark on *the sea of gall-stone surgery must be prepared for* some trying experiences. Sir Spencer Wells has, in *his teaching* as to hepatic surgery, repeatedly directed attention to the importance of delicate manipulations. He has shown from his own experience how the gall-bladder and the common duct may—especially in cases of chronic calculous occupation and recurrences—take on a condition of friability compelling a supreme carefulness of handling. Even with a great deal of care the impaired structures may be lacerated at places and times most compromising to the surgeon's best results. The walls of the gall-bladder are frequently the seat of hypertrophy while the capacity is diminished; they tear and bleed readily and refuse to hold the suture, when the contrary actions are desirable. The walls of the ductus choledochus, on the other hand, often show a thinning and dilatation where there has been an impaction of a series of calculi. These have not infrequently embarrassed the progress of an operation at the critical juncture. They have converted comparatively simple operations into dangerous and difficult ones. When both gall-bladder and ductus have been impaired through chronicity of the calculous habit, the task of suturing newly-fitted parts together is made a momentous concern both to surgeon and patient. An example of interest where difficulties of this character have been successfully, although with meager margin, overcome, has been reported by Sprengel.

This was a case of chronic biliary disease which was marked by an excessive dilatation of the common duct, not at first recognized by the surgeon. A first operation, for the relief of obstructive symptoms, was performed with difficulty. It consisted in an abdominal section, and in finding a gall-stone apparently lodged in the common duct; by the exertion of some force, the stone was passed into a cavity, supposed to be the duodenum, but it was really still detained in the ductus communis. The operation was concluded, but no essential improvement of symptoms was obtained. After a few weeks another operation was undertaken, the abdomen was reopened and a calculus was found in the cystic duct and was forced back into the gall-bladder; the common duct was enormously dilated. The gall-bladder with its contents was then excised, when, for the first time, a second stone was detected in the hepatic duct. An attempt was made to bring down this stone into the duodenum, but the friable common duct was torn across, and the calculus was liberated. This accident imposed upon the surgeon the duty of establishing a new channel for the discharge of the hepatic duct into the intestine. This was done by bringing the common duct into contact with the duodenum and sewing them together, thus making a *choledocho-enterostomy*. In the face of all these complications, the patient made a good, even a rapid, recovery, and reported greatly improved and entirely well four weeks after the second operation.

REHN, of Frankfort-on-the-Main, has also recently extirpated the gall-bladder in a case of calculus obstructive disease, when there was brought to light a series of gall-stones, occupying the common duct. These were cut down upon and shelled out. The wound was closed with sutures, and recovery followed.

DR. RICHARDSON, of the Harvard school, has had some interesting choledochal surgery during the past year; two successful cases being briefly summarized in a recent issue of the *Boston Medical and Surgical Journal*. The operations were necessitated by biliary calculus. One of them was the case of a boy having a calculus of moderate size lodged in the cystic duct. The stone was readily cut down upon and extracted, but when the surgeon undertook to unite by sutures the gall-bladder and the abdominal parietes, the former "tore all to pieces in spite of the care" he could use. He was compelled to extirpate the bladder, and to form a biliary fistula, using for the latter purpose a glass tube and packing of antiseptic gauze.

A second case of the same surgeon was that of an adult male, for eight years a sufferer from gall-stone disease. In this case there were in the cystic duct eight calculi in a row, reaching to and extending into the gall-bladder; the latter was contracted in size, with its walls thickened, bleeding and friable. A third case of DR. RICHARDSON which had a fatal termination, was that of an adult female, having the history of chronic biliary obstruction, colic, jaundice, and cholæmia. In this case the operation was handicapped by a shrunken gall-bladder having thickened and fragile walls. Here also the bladder "tore all to pieces," and a free flow of bile came down into the wound through the hepatic and common ducts. This formidable train of troubles was temporarily overmastered by the glass tube and gauze of iodoform, bringing about rapidly the formation of a biliary fistula. The woman did well for several weeks, but a sponge had been overlooked and left in the abdomen at the time of the operation, so that a fatal septicæmia marred all the surgeon's efforts. With regard to the future history of the biliary fistula thus produced by the surgeon, the latter gives himself little concern, or as DR. RICHARDSON expresses it: "The fistula closes, takes care of itself."

There is another surgical procedure for the relief of biliary calculus, which has been performed a few times upon the Continent, with very good results, called *choledochotomy*. It is applicable only to those cases where the gall-stones are confined to the ductus communis. The operation consists in bringing that duct into the surgical field, in making into it a longitudinal incision, not necessarily a long one, in extracting the calculous contents and then closing the wound with sutures and antiseptic dressing. KUESTER, of Berlin, has found records of six of these operations with only one death. His own case was successful, although performed in a case manifesting some of the unfavorable alterations of structures, noted above, due to chronicity. His patient was a female of forty-eight years, having the history of gall-stone disease for two years, and of jaundice for several months. KUESTER'S diagnosis, based on all the symptoms, was that of obstruction of the common duct. The early stage of the operation verified this diagnosis. He found the gall-bladder contracted, the ductus communis very much dilated, and containing several stones. The duct was opened, the stones removed, and the wound closed with a double row of sutures and packed with iodoform gauze. A considerable amount of secondary hæmorrhage was the only accident to mar a complete recovery. The scope of this operation is, of course, narrowly circumscribed; it cannot, for instance, take the place of the *cholecystenterostomy* in cases of closure of the common duct, but BRAUN, of Königsberg, has reported a case that required both of these procedures. His case was one where the true extent of the disease was masked by adhesions. After breaking up these he sewed the contracted gall-bladder to the duodenum, when he discovered a large calculus in the common duct which was removed by incision into the duct. The wound was closed by four sutures, compressed with antiseptic gauze, after which an uncomplicated recovery took place. After seven days there was a flow of bile into the intestines.

Some of the new surgical terms given above have an awkward turn and sound, but they are expressive and descriptive and will probably stand the test of time, as many another one has already done. During the formative period of a branch of surgery having so many possible variations as hepatic operations have, a moderate new vocabulary must be accepted and even encouraged.

An interesting side light upon the subject, reported by MR. ARBUTHNOT LANE, of London, seems to show that the peritoneal cavity is, or may be under suitable circumstances, tolerant of an almost unrestricted flow of bile. The case of MR. LANE was one of rupture of the gall-bladder by external violence. Abdominal section was performed at an interval of over a month after the accident and a quantity of biliary fluid —stated at "about three gallons"—was removed. The patient, a male aged eighteen years, was seemingly moribund when he was received into the hospital, and the laparotomy was performed without much hope of success. Improvement, however, did take place. About ten days after the operation, a dull area was found over the liver and extending downwards as far the umbilicus. Aspiration removed six pints of bile, and an incision was made later, and exploration with the finger introduced into what was apparently an adherent gall-bladder. A drain was introduced, which on ceasing to evacuate bile, was removed at the end of a week; the patient then improved rapidly and gained weight and strength. Mr. Lane's case and comments thereon, were published in the *Lancet* for May 16. He thinks that if bile can be retained in the abdomen for a term of weeks without producing symptoms other than those of a serous effusion, it will give the surgeon much more courage in interfering with abnormal conditions of the gall-bladder and ducts. He holds that the escape of bile into the peritoneal cavity has been unduly dreaded from the fear of imaginary risks involved. *According to Pavy no serious effects follow* the escape of bile into that cavity in the case of dogs and rabbits.

E. BOUCHUT.

This eminent French pediatrician died in Paris November 26, 1891, at the age of 73 years. Bouchut was a voluminous writer, many of his productions being honored by special recognition. His pugnacious disposition, and the force with which he defended his ideas, prevented him from reaching the goal of his highest ambition, a membership in the Academy, and a professorship. His most extensive work was a large, systematic treatise on pediatrics, entitled "*Traité pratique des maladies des nouveau nés, des enfants à la mamelle, et de la seconde enfance.*"

He was a strong advocate of the use of the ophthalmoscope in the diagnosis of cerebral diseases; *cerebroscopie*, he termed it.

He was the originator of intubation of the larynx, and his essay, "*Du traitement du croup par le tubage du larynx,*" may be found in the *Comptes rendus de l'Academie des Sciences*, and the *Gazette des Hôpitaux* for 1858.

A NEW HOSPITAL FEATURE FOR PREVENTING THE SPREAD OF INFECTIOUS DISEASES.

The *Medical Press and Circular*, November 4, has a description of a new hospital at Berlin, called the Emperor and Empress Frederick Children's Hospital. The pavilion for diphtherial patients has a peculiar arrangement which is designed to imprison the contagium of that disease, whether brought there or generated there. This pavilion is entered by what is known as the "schleuse," or sluice. No person is allowed to pass directly into the ward from the outside world, but must pass from the porter's room into the "schleuse." There the visitor must take a bath and change his clothes; the same process must be gone through with on leaving the pavilion. The hope is that not only will these precautions prevent the conveyance of the disease to any one outside the hospital, but also to the inmates of other parts of the institution. Two new wings for non-contagious diseases have just been completed, increasing the number of beds to 200. This hospital has had a rapid progress, being under the sunshine of imperial and court favor. At the time of the death of the Emperor Frederick, the city authorities of Berlin voted the sum of 500,000 marks for the purpose of a memorial, and the disposition of the sum was handed over to his widow. She without delay determined to build with it a hospital for children, and a committee of citizens, headed by Virchow, seconded the good resolve by the collection of a fund nearly as large as that given by the civic Government. It is intended soon to add two other pavilions, one for whooping-*cough and another for measles.* Dr. A. Baginsky is the chief director of the hospital, while Dr. Gluck is the director of the surgical side.

Some Answers of Students.—The *Chemist and Druggist*, quotes from the Bedford College Magazine some curious specimens of students' answers about nitrous oxide. One of these is the following: "Nitrous oxide is often called laughing-gas. With this gas they pull out teeth; this is the reason they call it laughing gas." Another is: "Nitrous oxide has a sweet taste, has a soothing influence, is an æsthete." Others there were that were quite as wide of the mark—but these will show how superficial an impression can be made on the mind of a chemistry student.

AN ARMY MEDICAL BOARD.

In response to our suggestion in a recent issue of The Journal, the Surgeon-General of the United States Army issues the following notice. We earnestly hope the Surgeon-General of the Navy and Marine-Hospital Service will also see the propriety of convening examining boards in other interior cities. This is as it should be.

AN ARMY MEDICAL BOARD

will be in session in Chicago, Ill., during February, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before *January 15, 1892, for the necessary invitation, stating* the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, *if any, from the authorities* thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to *professional standing, character* and moral habits. The candidate must be between 21 and 28 years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C.

C. SUTHERLAND,
Surgeon-General U. S. A.

CIRCULAR OF INFORMATION FOR MEDICAL MEN WHO MAY BE DESIROUS OF ENTERING THE U. S. ARMY MEDICAL DEPARMMENT.

The Medical Department of the Army consists of one Surgeon-General with the rank of Brigadier-General; one Assistant Surgeon-General; one Chief Medical Purveyor and four Surgeons with the rank of Colonel; two Assistant Medical Purveyors and eight Surgeons with the rank of Lieutenant-Colonel; fifty Surgeons with the rank of Major; and one hundred and twenty-five Assistant Surgeons with the rank of First Lieutenant of Cavalry for the first five years of service, and of Captain of Cavalry subsequently until their promotion by seniority to a majority.

With the rank stated in each case the pay and emoluments of the rank are associated. The salary of each grade is a fixed annual sum, payable monthly; but at the end of each period of five years of service, the annual sum representing the pay of the grade is increased by 10 per cent., until 40 per cent. is added. After twenty years of service, the 40 per cent. additional continues to be drawn, but the further increase of the pay by 10 per cent. additions ceases; *i. e.*, an officer, although he may have served twenty-five or thirty or more years, can, under existing laws, have no more than 40 per cent. added to his pay proper by way of increase for length of service. The pay of a first lieutenant of cavalry, or of a medical officer during the first five years of his service, is $1,600 per year, or $133.33 per month. At the expiration of his five years of service he becomes, by virtue of that fact, a captain, and his pay is that of a captain of cavalry, $2,000 per year, increased by 10 per cent. for his years of service, viz.: $2,200 annually, or $183.33 monthly. At the end of his tenth year of service, this rate of pay is increased by the service-addition to $2,400 annually, or $200 per month, and after five years more, the service-addition makes his pay $2,600 annually, or $216.67 per month. If he continue in the rank of captain, at the end of twenty years of service his monthly pay becomes $233.33; but about this time promotion to a majority is usually obtained, and a major's annual pay of $2,500, with 40 per cent. added, makes the monthly pay of the major and surgeon $291.67. Subsequent promotion, investing the individual with the rank of lieutenant-colonel, colonel, and brigadier-general, augments the monthly pay respectively to $333.33, $375 and $458.33. Compulsory retirement at the age of 64 years increases the rapidity of promotion to the younger men; and when retirement is effected either by age, or by the accidents of service prior to reaching the retiring age, the rate of pay subsequently drawn is 75 per cent. of the total salary and increases of the rank held by the individual at the time of his retirement. Thus, a major retired for broken health after twenty years service, draws 75 per cent. of $291.67 per month; a colonel retired for age, 75 per cent. of $375. The medical officer has the right of selecting quarters in accordance with his rank, and when stationed in a city where there are no Government quarters, commutation money, intended to cover the expense of house rent, is paid to him. The Government provides forage and stable room for the horses of the medical officer, and when traveling under orders, the expenses of transportation are paid by the Quartermaster's Department.

Among the privileges granted to medical, as to other officers of the Army, is that of leave of absence on full pay. The authorized leave amounts to thirty days annually. This leave is not forfeited if not taken during the year, but is credited to the officer, who may thus accumulate a continuous leave of four months on full pay. If he desires to be absent for a longer period than four months, and the permission is accorded him, he is reduced to half-pay for all time in excess of the four months, or maximum of cumulated leaves of absence. Absence from duty on account of sickness does not affect the relations of the officer with the paymaster; he continues to draw full pay.

A commission in the Medical Department of the Army is an instrument which is good for life, premising conduct consistent with its retention on the part of its possessor; but it involves no contract which binds the individual to service for any given number of years. On the contrary, should the medical officer find, on experience, that civil life has greater attractions for him than that of the Army, there is nothing to prevent him from at any time tendering the resignation of his commission.

A young medical officer, on appointment, is usually assigned to duty for a few months at some large post where there are other officers of his department, to afford him opportunity of becoming acquainted with the requirements of the Army Regulations and the routine duties of military life. After this he goes to some post west of the Mississippi River, where he serves a tour of duty of four years. An assignment in the East follows the leave of absence which is usually taken at this time; and in after years his stations are selected so as to give him a fair share of service at what may be called desirable posts, as an offset to the time spent at less desirable stations.

Candidates for appointment to the Medical Corps should apply to the Secretary of War for an invitation to appear before the Army Medical Board of Examiners. The application should be in the handwriting of the applicant, should give the date and place of his birth, and the place and State of which he is a permanent resident; it should be accompanied by certificates based on personal acquaintance from at least two persons of repute as to citizenship, character and moral habits. Candidates must be between 21 and 28 years of age (without any exceptions), and graduates of a regular medical college, evidence of which, the diploma, must be submitted to the Board. The morals, habits, physical and mental qualifications and general aptitude for the service of each candidate, will be subjects for careful investigation by the Board, and a favorable report will not be made in any case in which there is a reasonable doubt.

The following is the general plan of the examination:

I. The physical examination will be rigid; and each candidate will, in addition, be required to certify "that he labors under no mental or physical infirmity, nor disability of any kind, which can in any way interfere with the most efficient discharge of any duty which may be required."

II. Oral and written examinations on subjects of preliminary education, general literature and general science. The Board will satisfy itself by examination that each candidate possesses a thorough knowledge of the branches taught in the common schools, especially of English grammar, arithmetic, and the history and geography of the United States. Any candidate found deficient in these branches will not be examined further. The examination on general science will include chemistry and natural philosophy, and that on literature will embrace English literature, Latin, and history, ancient and modern. Candidates claiming proficiency in other branches of knowledge, such as the higher mathematics, ancient and modern languages, etc., will be examined therein, and receive due credit for their special qualifications.

III. Oral and written examinations on anatomy, physiology, surgery, practice of medicine, general pathology, obstetrics and diseases of women and children, medical jurisprudence and toxicology, materia medica, therapeutics, pharmacy, and practical sanitation.

IV. Clinical examinations, medical and surgical, at a hospital, and the performance of surgical operations on the cadaver.

Due credit will be given for hospital training, and practical experience in surgery, practice of medicine, and obstetrics.

The Board is authorized to deviate from this general plan whenever necessary, in such manner as it may deem best to secure the interests of the service.

The Board reports the merits of the candidates in the several branches of the examination, and their relative merit in the whole, according to which the approved candidates receive appointments to existing vacancies, or to vacancies which may occur within two years thereafter. *At the present time there are twelve vacancies to be filled.*

An applicant failing in one examination may be allowed a second after one year, but not a third.

No allowance is made for the expenses of persons undergoing examination, but those who are approved and receive appointments are entitled to transportation in obeying their first order assigning them to duty.

Copies of examination papers used by the Board in session in New York City are hereto appended as an illustration of the character of the questions submitted to candidates.

CHARLES SUTHERLAND,
Surgeon-General.

Approved:
REDFIELD PROCTOR, *Secretary of War.*

WAR DEPARTMENT, SURGEON-GENERAL'S OFFICE,
WASHINGTON, D. C., March 4, 1891.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(Continued from page 971).

William F. Hutchinson, M.D., read a paper on

WHAT A GENERAL PRACTITIONER CAN DO WITH ELECTRICITY.

After alluding to the pleasure that it gave him to write a paper for an Association composed of men in sympathy with his subject, Dr. Hutchinson began by saying that "American doctors in medicine are among the shrewdest of citizens. They know that the age demands increased capacity for production from them as from all others; and as their merchandise is public and private health, most preciously desired of all products, the people look to them to neglect no means to provide it as perfectly as may be. They know that foremost among these means, the scientific use of electric energy has taken place, and that its better use is one of the things to be learned."

He expressed his opinion of instruments needed by general practitioners as follows:

Much handling of them has taught me to avoid all prettily finished boxes whose contents are sealed, upon which repairs can only be made by the maker. My advice is to buy no form of galvanic cell unless every part is easily inspected, readily understood and quickly repairable without expert aid. So far, I believe that some form of Grenet cell is the best that a general practitioner can find for portable use. For office work, where great life is required and small trouble, I have not found anything to equal the new Edison cell, marked "Type C" in his catalogue. It will give exactly the some voltage, about seven-tenths volt per cell, during its entire life, about a year of ordinary service.

For faradic machines, I recommend a DuBois Reymond coil with two Grenet cells in the box. One of these will be sufficient for ordinary use, but in asphyxia from gas inhalation, in drowning cases and especially in opium narcosis, where it may be necessary to prolong the treatment for hours, a second cell is called for. Perhaps the best faradic machines in America are made by Fleming, of Philadelphia.

Among the diseases which Dr. Hutchinson thinks may be successfully treated by the general practitioner are all functional derangements of special sense and such forms of their paralysis as are dependent upon excentric causes, certain forms of dyspepsia dependent upon atony of stomach nerves, sexual neurasthenia and impotence springing therefrom, peripheral neuralgias and such others as are confined to long nerve trunks, herpes zoster, muscular rheumatism, neuralgic dysmenorrhea, and parametritis. In each of these he gave his method of procedure and the form of instrument best to employ, with many valuable hints.

He then presented an instrument made after his suggestion by Sample, of Chicago, which included, in small space and at a moderate cost, a milliamèter and voltmeter. This he uses to measure accurately resistances, and stated that he is at present engaged in a study of electro-diagnosis of disease by means of carefully measuring resistances in health and deviations therefrom, until a large enough number has been accumulated to formulate a system. In this work, he asked the coöperation of the Association. In conclusion he said: In this desultory way, gentlemen, I have endeavored to suggest some of the many things which a general practitioner may do and do well, with his two instruments and half a dozen electrodes. The list is but a small part of the whole, but it need not be extended here. I have said nothing of electro-surgery or gynecology, because I believe that success in both is dependent upon a degree of expertness in manipulation and an amount of knowledge of electro-physics that he will not be willing to give sufficient time to attain.

What he may not do, his own good sense and a fair amount of experience will soon teach him; and the remaining knowledge will be sufficient to imbue him with respect for the science of electro-therapeutics and for the men who devote themselves to its advancement, often in face of factious and determined opposition.

M. J. Grier, M. D., of Philadelphia, read a paper on

THE TREATMENT OF SOME FORMS OF SEXUAL DEBILITY BY ELECTRICITY.

Of the incidental inquiries presented to the physician, many of them will refer to the derangements of the sexual functions. They usually seek relief from a neuralgia, pain in the back, muscular debility, or some other cause leading easily and naturally from the ostensible to the real object of the visit; this is generally the case with the younger subjects who have become conscious of an appreciable physical failure, or who, from the presence of some slight subjective symptoms, are apprehensive that such failure will certainly occur. Another class will seek relief from conditions fully developed and at once are freely communicative. Both classes have morbid ideas as well as erroneous opinions concerning their condition and add difficulty to their management; some of them have already been under treatment; the family physician has been consulted, and iron, strychnia and electricity have been continuously administered, but without the desired result.

My purpose is to consider some of the conditions most usually presented, and what may be done for them by electricity.

The larger number of such cases present a state of local and general debility resulting from excessive and long continued stimulation of special nerve endings, with consequent exhaustion of the spinal and cerebral centres controlling the parts involved.

The neurasthenic condition of the patient will probably and justly demand our earliest attention. Whether it be the cause or the effect of the sexual debility, the progress and results of the local treatments will be much more decided as this state disappears. In one class, and I think a large one, it will be found to be a lowered functional activity of the entire nervous system, depending on preceding mental depression caused by the gradually developing consciousness of the diminution of the virile power and the fear of its complete abolition. In another class, of more mature years, we will find varying degrees of inability, ranging from actual impairment of function to complete loss of power.

In addition to the value of properly directed medication, aided materially by the change in the morale of the patient, as we succeed in inspiring him with the hope of relief by demonstrating to him its possibility through the results of treatment, we shall find electricity a potent factor in his restoration. Without attempting, in this phase of neurasthenia, to differentiate the form as to its special character beyond the recognition of the sexual disturbances, we may proceed to its relief at once by the employment of galvanism in the treatment of the head and spine. Central galvanization with its catalytic and alterative effects will, perhaps, best meet the indications; the method may be varied to suit each particular case; but, as a rule, the effort will be to bring the central and spinal centres under its special influence by either increasing or diminishing their irritability. In the application to the head the vertex is well moistened and a two-inch electrode placed on it and firmly maintained. The vertex is selected because the current is well borne at that point, there is less vertigo or other apparent cerebral disturbance. To diminish cerebral irritability I use the positive pole on the head, as I am convinced from observation the effect is more sedative. The negative electrode is a slightly convex button, two inches in diameter. For plate electrodes I prefer pure tin plates about No. 28 guage, as they are soft and are easily moulded to any curved surface and are always bright and fresh looking; these are covered with ordinary white undressed muslin, such as cotton shirting. I have used such a covering for over twenty years and prefer it. Perhaps equally important is the greater uniformity in the relation of the electrode to the skin, as to distance; it never varies 1-100 of an inch, keeping the current density quite regular; while with the sponge the ever varying distance and pressure may be quite enough to convert an intended stabile to a labile application. Having adjusted the positive plate to the vertex, the negative is placed subaurally on either side; beginning with a minimum amount of current, say about two milliampères, and a uniform pressure, the negative electrode is slowly moved down over the region of the cervical sympathetic nerves, until we reach the first dorsal vertebra, where we may gradually raise the current strength to five milliampères and pass slowly down each side of the upper spine. This current strength should be maintained, as the increased resistance of more tissue is brought into the circuit. As a rule we need not pass below the dorsal vertebra, depending on the cathelectrotonic state induced below that point, and reserving the special lumbar and sacral centres for subsequent treatment. Carefully avoiding any abrupt change of application and pressure, the positive may now be placed over the inferior cervical ganglion on either side and the negative traced over the course of each dorsal nerve, thus influencing gently the sympathetic ganglia. What this influence is, or how it acts beyond the so-called catalytic change, we do not know. The effect of an interrupted galvanic current on the nerves and muscles has been fully established, as laid down by the laws of Pfleuger, giving us normal actions of contraction on opening and closing the circuit. It is probable in a labile application of the current, as above, the movement of the cathode over the tissues is equivalent to an opening and closing of the current, as each cell is successively subjected to its presence, and thus there is induced a momentary contraction or tonic state of the vascular muscles, resulting in the improvement of circulation and nutrition.

Perhaps, also, the electrical actions upon trophic nerve tissues may produce changes in the disassimilation of other tissues and organs of the body, organic metamorphoses, modifications of nutrition, which constitute a part of the "catalytic effects."

The general result of the treatment after a number of applications is apparent in the disappearance of the sallowness, nervous depression, and a better cutaneous circulation as shown by the improvement in the complexion; a more refreshing sleep and less disposition to lag on rising; there is also an improvement in the digestive functions, and a general feeling of bouyancy. This gives us a much better foundation on which to build our efforts in the treatment of the local disturbances.

The loss of the erectile power is the most prominent of the local symptoms, and is that which naturally impresses the patient most forcibly, and impels him more than any other to seek professional aid; to him it is but a single fact; to his physician it is the evidence of the derangement of a complicated system of parts and functions, both local and general.

We will study the morbid conditions which will be found to arise mainly from the irritation or sedation of centres caused by overstimulation, and will consider more in detail the physiology of the mechanism of erection. The active dilation of the cavities of the corporal is effected through the influence of the nervi erigentes.

In speaking of the probable existence of the vaso-dilator nerve Landois says, "If the nervi erigentes be divided, there is no effect on the blood vessels of the penis; but if their peripheral ends be stimulated with electricity, the sinuses of the corporal cavernosa dilate, become filled with blood and erection takes place."

These reflexes may be excited by physical excitation of the sensory cutaneous filaments, by volitional contraction of the genital muscles, by the physical activity of the cerebrum. If the activity of these centres be thus induced, the first result is that of excessive dilation of the arteries, and engorgement of the cavities of the corpora and the first stage of erection is produced. To maintain it, the outflow of blood must be retarded by the constricting action of the appropriate muscles. Failure of these centres to respond means absence of dilatation and its attendant engorgement, and the resulting inactivity of the retarding muscles, producing a not infrequent form of nervous impotence clearly referable, directly, to the functional inactivity of the nervi erigentes.

These cases I have found associated with long-continued continence, and in men of excessive mental application in whom the outgo of cerebral activity has been expended in other directions; also in those who have become sexually morbid, having lost through exhaustion the normal physical reflexes; usually they retain more or less of the physical reflexes and respond to stimulation of the local sensory nerves, thus proving that the spinal paths of the efferent nerves have not been impaired, or at least not to a very great extent.

In such cases the indications are to stimulate the nervi erigentes and the upper centres acting in conjunction with them. An ascending current of about five milliampères of galvanism may be passed from the perineum, from over the third and fourth sacral nerves, where the vaso-dilator branches arise, and from the genito-spinal centre of Budge, at the fourth lumbar vertebra, successively; the negative electrode should be carefully applied to the back and sides of the neck and to the vertex, endeavoring to increase the excitability of the cortex in those in whom it has depressed, and to quicken the responses of the lower spinal centres to their impress.

We have another important set of nerves to consider in the vaso-motors. Their function is to maintain a normal tone or contraction of the blood vessels and antagonises the action of the vaso-dilators.

Their general centre lies in the medulla oblongata; stimulation of this centre contracts the arteries and its paralysis causes relaxation and dilatation of them. In the efferent nerves there are fibres whose stimulation affect this centre; some exciting and others depressing it. The primary stimulation of these nerves is attended by contraction of vessels and over-stimulation by dilatation of them; there are also local centres in the spinal cord, each controlling certain areas. Under ordinary conditions the vaso-motor nerves are in a state of moderate chronic excitement. If from irritation of these centres we have the vaso-motors over-excited and a controlling influence exercised on the vessels supplying the erectile tissues, through their dominant control over the vaso-dilators, the engorgement of the sinuses of the cavernous bodies will be prevented and erection will be impossible. This happens in the earlier changes following excessive sexual stimulation, and is most probably the result of the irritation, which precedes exhaustion of the centres. The excessive tone is shown in the diminished blood supply to, and the lowered temperature of, the pale and shrunken organ. In chronic hyper-action of these nerves, the lessened blood supply to the secretory organs is shown by the diminished amount of their secretions, and the consequent loss of this source of stimulation. In such cases, galvanism as described in the application to the vertex and upper spine for neurasthenia, will diminish the upper central irritability and good results will come from a stabile application to the lumbar region with a current of five or six milliampères through a positive four by four inch plate, one of equal size being placed at some indifferent point on the lower portion of the thigh. The extra current acts remarkably in many cases, and probably in the same manner as the continuous, temporarily lowering the activity of the constricting nerves. I find the best results are produced by placing a moistened electrode about 1¼ inches square against the perineum; this should be the positive pole; the negative may be a plate of three inches, held continuously against the sacro-lumbar junction; the cords should be connected with the terminals of the primary coil. Commence with the minimum strength and gradually increase it to as much as the patient can comfortably bear. The application will require from ten to fifteen minutes duration; in some cases, usually those who are less nervous and irritable, the effects are noticed at the time of the application; others may not notice a change for half an hour or longer, after the treatment. In those in whom the sensory nerves are not very much impaired the first impression may be a sense of tingling along the dorsal nerve of the penis; or it may be distributed over the inner surfaces of the thighs, through branches of the internal cutaneous nerves, often reaching to the knees. In a little time a warm glowing sensation will be felt mostly in the sacro-lumbar and gluteal regions; this being obtained, the application should cease. This effect may last from a few minutes to several hours, and will be alluded to by the patient at a subsequent visit as causing a feeling of comfort and pleasure. The ultimate result is a restoration of the normal circulation and an improvement in the nutrition of the parts with increased local muscular power.

The opposite condition of vaso-motor relaxation is frequently met with; it is an exhaustion following the state of irritability just described. When affecting the centres controlling the genital organs, the result will be a passive engorgement with a flaccid elongation; the temperature may be normal or lowered, depending on the sluggishness of circulation; the muscles are under-nourished and voluntary control of them is lessened; in many cases the secretion of the coronal glands is unpleasantly augmented. In the erectile effort, the vaso-dilators may be sufficiently active to enlarge the cavernous sinuses and increase the flow of blood thereto, but the weakened muscles fail to sufficiently retard the return of blood from them, and the result is a moderate increase of bulk, with a soft glans and an easily compressible body. As we cannot influence the nerves by direct contact, we will have to depend upon the application of galvanism to those parts which anatomy and experience teach us is the most available, and through which we can get reflex effects. A very efficient method will be the introduction within the urethra of an uninsulated metallic sound connected with the negative pole; the current of galvanism should not be over two or three milliampères, and should be slowly broken, say about twice each second, for not over two minutes; the contact should last only during the instant of making, giving a short interval of excitation and a longer one of rest. The improvement of repeated applications will be shown by the retraction of the organ to a normal size. The immediate effect of the application is due both to muscular stimulation and increased arterial contraction; but mostly to the latter. Two other methods may be employed to produce this stimulation. Galvanism applied to the surface of the inner side of the upper third of each thigh, with a bare negative electrode, kept slowly moving, and using a current strength only sufficient to develop a pungent irritation of the sensory nerves; to use more would be to overtax and exhaust the vaso-motor nerves still further. The bare negative electrode of the inductive coil may also be used over the same region and for the same purpose. The vibrations should be slow enough to give perceptibly distinct shocks. The positive pole in therapeutic applications may be placed at any indifferent part, since the effect desired is the reflex action produced by the irritation of the negative pole.

Dilatation and turgescence of the sinus of the corporæ having occurred, we can readily see how a partial or complete failure of these muscles to act will impair or prevent erection. In their sexual activity, these muscles, while partly under volitional control, are mainly excited by reflexes; and very readily, in health, become equally active under the reflexes resulting from stimulation of the sensory nerves of the penis and adjacent parts. These muscles respond more or less to the faradic and galvanic currents according to their degree of health or exhaustion, and tests thus made may assist us in the diagnosis of their condition. A suitable electrode, insulated when it comes in contact with the anal margin may be introduced in the rectum and pressed against the anterior wall; a small flat electrode, connected with the negative pole of the extra current should be placed against the perineum, and the current gradually increased in strength until muscular action is produced, which in health is quite strong. If the muscles fail, or respond feebly, the galvanic current may be substituted, observing the same polarity, making slow interruptions, with a feeble current gradually increasing both the strength and rapidity of interruption. This proceeding answers very well for the direct treatment of these muscles. Decided contractions of the accelerator and compressor urethral muscles may be obtained by substituting, for the perineal electrode, an uninsulated metalic urethral sound, using an uninterrupted galvanic current.

These muscles being supplied by the muscular branches of the pudic nerve, indirect stimulation of them may be made by placing a positive plate electrode over the sacrum, the rectal electrode becoming the negative and remaining as before; using, if the muscles are very feeble, a short constant current of not over two milliampéres, supplemented by twenty or thirty interruptions, occupying about one minute. A weak muscle of this class requires a long duration of current action and short intervals of rest, if the current be of not more than the above strength; vigorous treatment only seems to exhaust the already enfeebled parts. The rectal electrode may now be changed for a small perineal plate, and stimulation of the perineum and root of the penis may be made with a bearable strength of the extra current, slowly interrupted. This will produce both muscular and reflex effects.

Conjoined with defective muscular action, there is usually a lowered sensibility of the genital cutaneous and special sensory nerves, caused by the exhaustion following excessive stimulation. This will be found most marked about the prepuce and the glans, more particularly around the corona and the papillæ beneath the meatus; also, if the anæsthesia be profound, in the frænum præputiatis. The cremaster reflex is sometimes diminished and may be abolished. Such cases may have a decided cerebral sexual activity with physical failure; or there may be a moderate erectile power, with loss of sexual pleasure and a retarded or incomplete organism. Sensibility of the surfaces may be quite decided under electric tests, and the tactile sensibility much enfeebled or lost, lessening the value of electro-diagnosis, excepting as to the condition of the muscles. As the local nutrition is usually impaired, resulting in relaxation of tissue and lowered temperature, we will meet both indications by the use of the galvanic current applied to the sensory parts most affected, by means of a small bare electrode, placing a medium positive plate over the sacrum to include the origin of the pudic nerve, from which is given off the dorsal nerve of the penis. My experience is that in treating the lowered sensibility of such nerves, the best results are obtained from a very mild current in this manner, and continued only long enough to produce the blush and a slight pungent sensation at the negative pole.

In the earlier changes of nerve excitability one often finds an extremely sensitive condition; a hyperæsthesia, in which even contact of the ordinary clothing with the surfaces will suffice to produce erotic excitement; præputeal and rectal irritation, as well as other local causes, may originate it, and in many cases leads to direct stimulation of the genitals by touch, which continued to excess is a potent factor in producing abnormal excitability and consequent exhaustion of these nerve centres. It is also a frequent cause of premature emission. Having removed or corrected the exciting local causes, galvanism will aid us in removing the central irritability. We may use the sedative action of the anode applied over the sacrum, using a stabile current of not over five milliampères: the negative should be placed over some indifferent point, preferably to the lower limbs. It is essential to have a very mild current, free from any variation of strength and to maintain the sacral pole evenly at one position and for a longer time than has been advised in other applications. Having thus treated the centres, we may diminish the excitability of the nerve terminals by enveloping the penis with a soft metallic plate, thinly lined with moist absorbent cotton to fill up irregularities and make more uniform contact. This plate should be the anode and the cathode may rest on the abdomen. A mild, steady current through a sensory nerve for ten or fifteen minutes, traversing it in the normal nerve current direction, will lower the excitability of the nerve. Urethral irritability is a most frequent cause of morbid action of the genital centres, and gives rise to various degrees of nerve irritation or sedation. Premature and painful emission may also be traced to congestion and irritation of the veramortanum. Similar impaired functional activities may result from the reflexes induced by continued irritability of the urethral lining and its ducts. An anodic bare metalic sound, with a current of not more than one milliampère and a cathodic plate over the lumbar vertebræ, will diminish the excessive irritability of this membrane. Many other points might be considered, but the general method of treatment and the reasons therefore are here outlined, and I trust may be of service to others as I have found them.

(*To be continued.*)

Mitchell District Medical Society.

Forty-first Semi-Annual Meeting, held at Columbus, Ind., December 17 and 18, 1891.

First Day—Morning Session.

The Society met in the M. E. Church, and was called to order at 10:30 A.M. by the President, Dr. E. S. Elder, of Indianapolis, Ind.

Dr. Geo. W. Burton, Secretary, of Mitchell, Ind., read the minutes of the last meeting, which were approved.

Dr. Geo. T. McCoy, of Columbus. Chairman of the Committee of Arrangements, then made a report, in which he said that a banquet had been tendered the Society by the Bartholomew County Medical Society, and a carriage ride on the last day by the citizens of Columbus.

Dr. J. W. Marsee, of Indianapolis, read a paper entitled:

THE DIFFERENTIAL DIAGNOSIS OF INTRA- AND SO-CALLED EXTRA-CAPSULAR FRACTURES OF THE NECK OF THE FEMUR.

He said he left college with his ideas in hopeless confusion as to the pathology and hopeless disagreement between teacher and teacher, and between teacher and text-book, except that some fractures were within the capsule, and some without, and that in the latter cases bony union resulted, in the former not. There did not stand-out clearly in his mind one single fact or symptom upon which he could base even an approximately accurate differentiation between these two kinds of injury. Under these circumstances, he was forced to analyze the symptoms which were poured into him by his teachers, as draught mixed with grain in a hopper, and to ascertain as well as he could their relative value. He proposed to present these matters to-day, trusting that the symptoms on which he had relied for the last fifteen years might prove valuable to the Society. Concerning this differentiation several questions arise, as, 1, Is it worth while to make it at all. Hamilton, Bigelow and others say not, alleging, *a*, that the treatment is much the same in every fracture of the neck; and that, *b*, it is unusual to see a case in which a positive diagnosis, favorable or otherwise, can safely be made. With all deference to these distinguished gentlemen, he would beg leave to differ as to both propositions. 1. Because there is scarcely a single practitioner today who would not make a distinction between the treatment of a fracture clearly intra-capsular and one as clearly extra-capsular. The habit of treating all cases alike had for its corner-stone a doubtful diagnosis.

As to the second proposition, he believed that a positive differentiation, and consequently a positive diagnosis, can be made in nineteen cases out of twenty. But aside from the treatment, we have a strong inducement to leave untried no chance of accurately locating the seat of injury.

When a patient employs a surgeon, he has a right to expect not only the utmost exercise of that surgeon's skill in diagnosis and treatment, but as well to receive such consolation and relief for mental suffering, as may come from the confident hope of a favorable termination of his case; on the other hand, such warning is but the future disposition of his affairs as may come from a less favorable prognosis. Fractures of the neck of the femur, in the lay mind as well as in the professional, are divided into two great classes; the one leaving as a net result, even though it be after weeks of suffering, a limb shortened, deformed, with lessened motion, but still serviceable, even strong enough to help earn a living for its owner and his family; the other leaving a state of affairs little short of practical helplessness.

Admitting then, for the sake of argument, that at the moment of occurrence extra-capsular and mixed fractures are impacted, and all intra-capsular are not, we come to the question, How can this differentiation be made? By settling the question of impaction first of all, for upon the maintenance of this condition depends our security of future best results. All violent manipulation, extreme flexion, hyper-extension or rotation, or standing the patient on his feet, are to be avoided. Sabatur long since called attention to the fact that the certainly and rapidly fatal cases were those which had been roughly handled.

To one watching the common diagnostic methods in these cases, advocated by high authority, he ceases to wonder that surgeons are skeptical about impaction, as it is often broken up under their manipulations before they think of looking for it. As a matter of fact, preternatural mobility and crepitation, invaluable sometimes under ordinary circumstances, should be kept in the background here, since a search for them is prejudicial and often fatal to impaction, and they are most easily found in cases clear enough without them. To make this diagnosis, it is not necessary even to lift the limb from the bed, to make any great amount of extension, or more than slightly and quietly to rotate the limb.

The behavior and appearance of the great trochanter is the keynote of the situation.

Should there be no impaction present in fracture at the base of the neck, the author would consider a positive diagnosis almost impossible, but should try to base it on age; direction of force, rotation of femur on its own axis, and signs of injury to great trochanter.

A word with reference to the medico-legal aspect of such cases. Suits against surgeons for failing to secure bony union in intra-capsular fractures, or on account of the deformed, shortened and partially crippled limbs resulting from the impacted variety, are not uncommon. He is convinced that by a little foresight on the part of the surgeon, these suits could be avoided. He recommended a careful differentiation of the varieties with a view to accurate prognosis. On the basis of this clear diagnosis, let a prognosis equally clear be made in plain language, and in the presence of reliable witnesses. He has for years explained to both patient and friends the exact location of the fracture, and the absolute necessity of the result, whatever that may be. He advises also, that the surgeon claim no special credit for good results in such cases. Honesty between surgeon and patient was a factor of vital importance from a medico-legal standpoint.

AFTERNOON SESSION.

Dr. P. Richard Taylor, of Louisville, Ky., read a paper on

INTUBATION IN DIPHTHERIA.

He reported four cases of intubation, selected from a number during the recent endemic of diphtheria in Louisville, two of which were fatal, and two successful.

Case 1.—October 29, he was called to intubate the larynx of Robert W., aged 7 years and 5 months. On examination, he found diphtheritic patches on the tonsils and in the pharynx. In the larynx the mucous membrane was swollen and tumefied, but there was no false membrane. Temperature was 102.5°; pulse 150, and thready. The dyspnœa was distressing. A tube the size required for an 8 year old child, was introduced into the trachea, which relieved the dyspnœa immediately. At the end of an hour, respiration was 22, pulse 140. A spray of peroxide of hydrogen was used every hour. The tube was removed on the seventh day, the child making an uninterrupted recovery.

Case 2.—R. H., æt. 2 years and 8 months. On examination, he found diphtheritic membrane in the nares and pharynx, on the tonsils and tongue, and in the larynx. The child had been sick but forty-eight hours; the temperature was 102°, pulse 150, the dyspnœa excessive and progressing. A tube the size required for a child 3 years old was introduced into the larynx, relieving the dyspnœa immediately, and in ten minutes the child was asleep. On the morning of the third day, the temperature was 101°, pulse 140, face flushed, membrane yellow and breaking down. A spray of peroxide of hydrogen was ordered to be used every hour. Child died on the afternoon of the fifth day, from septic poisoning.

Cases 3 and 4 were similar to those reported. The author said that intubation, in diphtheria, is indicated as soon as dyspnœa becomes progressive, and is due to laryngeal obstruction resulting either from false membrane, or tumefying of the mucous membrane and surrounding tissues, under which conditions the introduction of the tube gives immediate relief.

The size of the tube is governed by the child's age, according to O'Dwyer's system of measurement, except in such cases where the tube has been dislodged by coughing, when he invariably substitutes the next size larger, and this latter, his experience had taught him, is absolutely essential.

The nourishment must be liquid, or else in the form of ices, and must be administered by the spoonful, the patient either sitting in the upright position, or lying on the side, and taking the entire contents of the spoon at one swallow, to prevent the passage of the liquid into the tube.

The removal of the tube between the fifth and the ninth day, ordinarily, is safe, but in some cases he has left it in position as long as twelve days. Its removal leaves the vocal cords stretched wide apart, the epiglottis standing almost straight, and stiffened from being held for several days in one position, and also leaves it unable to perform its normal function, rendering it necessary for one or two days longer to give liquid food by a spoon.

In two cases cited death resulted from septic poisoning and heart-clot, and frequently, exhaustion is the fatal cause. The specialist renders breathing possible, yet he with all his apparatus, and the general practitioner with all his medicine, can give but a grave prognosis in diphtheria.

Dr. Geo. W. Burton, of Mitchell, Ind., asked if Dr. Taylor used the peroxide of hydrogen in full strength, to which Dr. Taylor replied that he did; that he used it with the idea of dissolving devitalized tissue or membrane, not expecting to get any systemic effect from it.

Dr. Geo. T. McCoy, of Columbus, asked Dr. Taylor to explain the technique of intubation, which he did, his method being about the same as that recommended by O'Dwyer and others.

Dr. Lewis C. Cline, of Indianapolis, considered the subject under consideration an exceedingly interesting one, not only to the specialist, but to the general practitioner. He thought the trouble with general practitioners, in performing the operation of intubation, was due to a lack of confidence in themselves; at least, this had been his observation. When he took a special course under O'Dwyer in New York, he said, O'Dwyer gave a public exhibition of his method on a dead baby to the doctors attending the Post-Graduate School, and of the fifty-five physicians who saw the operation, only three succeeded in introducing the tube into the larynx in one hour's time. The operation had to be studied thoroughly before it could be done dextrously. It was simply mechanical. Every physician should learn to do the operation. If the diphtheritic trouble extends down into the trachea very far below the larynx, he thought that neither intubation nor tracheotomy was of any consequence, and simply added suffering to the patient to do it. Where, however, it is located entirely in the upper part of the larynx, so that the tube will pass through, relief is immediate. He had intubated in three cases, the first one being a success. In two other cases the introduction of the tube did no good, because the diphtheritic membrane had extended down the trachea, and the tube would not pass the obstruction.

Dr. A. B. Richardson, of Cincinnati, said he had been interested in this subject of late simply from the reading of papers in regard to it. At the last meeting of the Ohio State Medical Society, Dr. Goodhue, of Dayton, read a paper giving statistics of twenty-seven cases in which he operated, with a mortality rate of 40 or 45 per cent. Since then, in a paper read before the Cincinnati Medical Society, Dr. Goode had given statistics of twenty-seven cases also (by coincidence), with about the same rate of mortality.

Dr. Richardson thought there was very little variation on the part of operators in the technique of the operation; but the rate of mortality was interesting, and the question comes up as to whether it is an improvement over tracheotomy. He believed the general opinion of operators was that intubation was less formidable, in its aspects at least, and consequently more acceptable to the friends of patients, and more easily done. It does not require anæsthesia, and offers as good, if not better, prospects for recovery, consequently is to be preferred to tracheotomy in most cases.

Dr. Taylor said the mortality in intubation was between 40 and 60 per cent. A doctor's percentage fluctuated according to the virulence of an epidemic. The operation of tracheotomy was about abandoned for cases of diphtheria;

but for foreign bodies in the trachea, it was a good operation, and as a rule successful. For the removal of diphtheritic membrane it was a failure.

Dr. McCoy would like to know *when* and *when not* to operate. He had had several cases of diphtheria from time to time which had terminated fatally.

Dr. Taylor related instances of physicians in Louisville for whom he had recently intubated. One physician had up to the present time fifty-five cases, with five deaths. In the five fatal cases the trouble was laryngeal. The majority of cases that became laryngeal were necessarily fatal whether the tube was introduced or not.

As to diagnosis, or *when* and *when not* to operate, that depends upon the physical examination, of finding where the obstruction is, of telling whether the membrane has extended down the larynx or not. This could be determined by using the laryngeal mirror, etc.

Dr. William Freeman, of North Madison, Indiana, had met with a large number of cases of diphtheria during twenty-six years of practice, but could hardly believe that 30 per cent. of the cases were due to laryngeal stenosis. He did not believe that one-half of the cases he had seen, in which the larynx was involved, were fatal.

Dr. E. S. Elder, of Indianapolis, said that intubation of the larynx was an exceedingly valuable method of treatment, and comes in as a life-saving remedy when other measures failed. One of the most frequent causes of death in diphtheria was heart failure. We know that if dyspnœa continues for a long time, it tends to weaken the heart rapidly, and it is a potent factor in the causation of heart failure. If we could maintain a vigorous circulation, he thought the obstruction would pass off after a while. Most operators restricted intubation to laryngeal obstruction alone; but since the introduction of the operation a great many physicians had "gone wild" over it, and had made exaggerated claims for it, resorting to it in cases that were hopeless from the first, hence he thought more or less *odium* had been attached to the operation. Tracheotomy, in his opinion, was a desperate operation, and only occasionally did cases get well from its performance. There should be no comparison between it and intubation. Intubation saved the physician a good deal of mortification; it was not a bloody operation and the patients could stand it. In a word, it was imperatively demanded in all cases of laryngeal obstruction. All practitioners owed it to their patients to learn to do the operation as rapidly as possible.

SURGICAL TREATMENT FOR NASAL AND NASO-PHARYNGEAL REFLEXES.

This was the title of a paper read by Dr. Lewis C. Cline, of Indianapolis, Ind. He said the subject of naso-pharyngeal reflexes was not only of great importance to the specialist, but to the general practitioner, as it enabled him to account for, and intelligently treat, many distressing cases. To have a reflex phenomenon, we must have irritation produced in a sensitive nerve connected with a nerve centre or spinal cord, and this in turn must be connected with a motor fibre joined to a motor organ, which may be located in an entirely different organ or part from that in which the irritation is produced, as migraine from indigestion or uterine irritation, etc., which may result in a pathological lesion or a train of morbid symptoms. In no part of the body do we find the reflex tendency so great as in the naso-pharyngeal and respiratory regions, hence we should not be surprised to find the nose a frequent source of reflex phenomena. The first to call attention to nasal reflexes was Voltolin, who describes a case of spasmodic asthma due to nasal polypus, which was cured by the removal of the growth.

All writers on this subject recognized the importance of investigating the condition of the nasal membrane in these diseases. In 1886 Bosworth published a paper in which he argued that the prominent predisposing cause of nearly all cases of hay fever was due to obstructive lesions of the nose in this way giving rise to vascular dilatation behind the point of obstruction, thus rendering the parts more susceptible to the action of irritating influences; and this in fact may, or does, account for many of the reflex phenomena that are met with; such as supra-orbital neuralgia, hay fever, asthma, some eye reflexes, chronic laryngitis, etc.

Sir Morell Mackenzie recognizes the fact that in a great majority, if not all cases of asthma, the mucous membrane of the nose presents evidence of disease.

To sum up, there were three essential conditions necessary for the production of an exacerbation of hay fever or asthma: 1. The presence of pollen or some irritating substance in the atmosphere; 2, a neurotic habit, and 3, a local morbid condition of the mucous membrane. These three conditions are present *in all cases, and any individual is liable* to an attack in whom one or more of these conditions are absent. Now, since a large per cent. of the cases have obstructive lesions, and all are exposed to the influences of dust and pollen at certain seasons of the year, we must look to the curing or bettering the conditions of the nose and naso-pharynx, such as deformed septums, spurs, tumors, hypertrophy of the turbinates, and adenoid tissue of the vault and tongue.

Dr. Cline reported several cases illustrative of the effects of surgical treatment.

In treating his cases, attention is not entirely directed to the local morbid conditions, but that due consideration is given to constitutional tendencies, such as malnutrition, scrofula, gout, and rheumatism.

Dr. P. Richard Taylor, of Louisville, thought that Dr. Cline's method of disposing of hypertrophied tissue, in the nose or any other portion of the body, with the galvano-cautery, was not the best; that the knife was far more preferable, inasmuch as it left no devitalized tissue in its track. It leaves a perfectly smooth and healthy surface, which becomes covered with epithelium. Scar tissue was the first tissue to break down where the galvano-cautery was used on an inflamed surface. In hypertrophied tissue of the turbinated bones, or tissue with increased vascularity, we cause shrinkage immediately around the point at which we burn; in other words, we make a cicatricial streak through the hypertrophy. He had noticed that patients were more liable to take cold when the galvano-cautery was applied to hypertrophied tissue. Wherever it is practicable to remove hypertrophied tissue, he thinks it is best to remove it with a clean cut instrument, one that leaves no devitalized tissue in its track. The surfaces will heal much quicker under the knife than with the galvano-cautery.

Dr. A. B. Richardson, of Cincinnati, said he was interested in the subject of reflexes from the standpoint of the neurologist, and thought that the position taken by the essayist was unquestionably correct, that many of the reflex neuroses were due to local irritations in the nose, pharynx, larynx, etc., and it is not necessary that these reflexes should exhibit themselves only in organs immediately connected with these, that they may present themselves by symptoms in various portions of the body where there does not seem to be any other connection than that they are in the same organization. There was no doubt but what many brilliant successes were reported from the correction of the various local irritations. There were cases of *noli me tangere*, that is, if the individual is touched or treated in any way, it results in an aggravation of the reflex. This was not an argument against the correction of the reflex, but it simply served as a warning to specialists as well as general practitioners, that they must not hope for success in every case

The probability of success depends upon the relation that the local irritation bears to the general neurotic tendency in the individual. If the neurosis is marked, if there is an extreme tendency toward irritation, if there is an extreme susceptibility to impressions upon the nervous system of the individual, we must expect frequently as the result of our attempts to correct the irritation, that we will aggravate the tendency, that we will increase the susceptibility, and that instead of finding our patients benefited as a result of local treatment, we will find them injured.

Then, we must take into consideration the psychic element in each case. The patient's attention should be concentrated upon the treatment. If we improve the local condition, we do much toward making the patient believe that we are removing the trouble. We know how much the psychic impression has to do with the ultimate result in these cases. By modifying the local symptoms, we do much to remove the reflex. On the other hand, if we have a very susceptible organization, with a tendency to the development of psychosis, the irritation results in decided injury. The tendency toward the development of psychosis is increased by local treatment, and the result is that the patient is not benefited, but made worse by treatment.

Dr. A. J. Banker, of Columbus, Ind., corroborated the theory advanced by the essayist. He recalls the case of a patient who had derangement of the digestive organs and impairment of the nerve centers. The patient became a confirmed invalid; he was unable to sleep, and could scarcely eat—in fact, the patient found comfort in nothing. He had been treated for catarrhal difficulty. On close insection he found two polypi, one hanging behind the soft palate nearly the size of a hickory nut; the other was in the posterior nares, which was seen by a reflected artificial light, and which was removed with great difficulty. The patient, after the removal of the first polypus, had a severe attack of inflammation of the structures about the nose. It brought about an attack similar to the one he experienced several years prior to that time. The nervous system had become in a tonic, clonic spasm, and he was confined to his bed for months. The same symptoms followed the removal of the second polypus, which he had labored under for some time. After the removal of the second one, there was no further difficulty. He has since remained comparatively well. In taking cold, the same train of symptoms returns.

Dr. Banker has used both the galvano-cautery and the knife, and so far as the effect is concerned, he could see no difference. He thinks, however, that where there is a neurotic condition emitted from the point of irritation, which has continued for a considerable length of time, we get a more decided effect on the nervous system by the galvano-cautery. He thinks there is an effect produced from the heat and galvanism upon the peripheral extremity of the nerve over and above that of any other source of application or treatment.

Dr. Lewis C. Cline, in closing the discussion, said that one of the objections to the use of the knife was hæmorrhage, which sometimes was difficult to control, and the operation had to be deferred in consequence of it. He, however, uses the knife in some cases, but he carefully selects those cases. When we come to treat hypertrophies in the nose, such as we find in the posterior end of the turbinates, it is difficult to see them without a palatal retractor. Dr. Cline finds that when he uses the cold snare and removes growths by degrees with a view of preventing hæmorrhage, it is much more satisfactory than with the knife. With the knife he gets an unusual amount of hæmorrhage, hence he is a little skeptical in regard to its use. Some people, he thought, were prejudiced againt the cautery, but in his judgment no more harm resulted from its use than the knife.

Dr. Moses N. Elrod, of Hartsville, Indiana, read a paper entitled

THE CORRECT PRONUNCIATION OF MEDICAL TERMS,

in which he cited numerous examples of words that were daily mispronounced by physicians whom he thought knew better.

The paper was discussed by Drs. Elder, Richardson, Freeman, Burton, and Garrish.

Dr. C. A. L. Reed, of Cincinnati, followed with a paper on

HÆMORRHAGE AT OR NEAR THE MENOPAUSE.

Dr. William H. Wathen, of Louisville, Ky., regretted that he did not hear the whole of the paper. However, what he did hear of it was sufficient evidence of its practical character. The presentation of facts relating to cancer of the uterus ought to be studied carefully by every practitioner of medicine, just as much so as by the specialist, because the majority of cases are those that first consult the general practitioner, and are by him referred to the specialist for treatment. He could fully corroborate what Dr. Reed had said regarding the great difficulty the specialist had in seeing cases sufficiently early to enable him to do satisfactory work. There were women almost weekly consulting the specialist who could probably have been entirely relieved of their difficulty had they consulted him in the earlier stages of the disease. He had constantly been impressed in Society meetings in the vicinity in which he lived of the importance of making a physical examination in those cases where we have any symptom that would indicate malignant disease. Every woman who has a hæmorrhage at any stage of her existence from the uterus that is irregular, that does not conform to the general rule of her life, whether it is a young girl not over twenty, or in a woman of sixty, ought to be examined, and if the profession would adopt this rule, we would find that most of the cases of cancer would be diagnosticated sufficiently early to admit of treatment.

He thought the correct treatment in the early stages of the disease, before it had involved adjacent structures, is total extirpation after the fashion that the operator may adopt. While he was in Washington, attending the meeting of the American Gynecological Society, he was very much impressed by the remarks of Dr. Burn, of Brooklyn, concerning his (Burn's) experience in the treatment of cancer of the uterus by the use of the galvano-cautery. He (Burn) had operated upon five hundred cases with the heated knife, and had never had a death from any cause resulting from the operation. He never had sepsis following. He had to cut into the peritoneal cavity frequently, and had no concern about it. He had opened the rectum and bladder upon more than one occasion without serious results. The speaker felt perfectly sure that the results in the treatment of cancer of the uterus by the galvano-cautery in the practice of Dr. Burn were far more successful and less dangerous than in the practice of any man in this country from any other method. Now, then, the question might be asked why the speaker did not adopt it. Because he believes he could not get the successful results that Dr. Burn gets. He considers Dr. Burn a genius in this method of treatment. He understood it perfectly. It must be confined to very few men. Again, this treatment was far more applicable to cases where it is a question in the mind of the operator as to whether hysterectomy will give relief or not. In those cases that have gone a little too far, such as we usually get, unfortunately, the galvano-cautery comes in all right.

Dr. Wathen had, within the last two weeks, seen two cases in consultation, where he was entirely undecided as to whether hysterectomy should be done or not. He could promise these women but little benefit. Where the disease was extensive, even after an operation had been done, it seemed to be universally the fact that the disease returned. He had seen a lady a day or two ago who had been operated upon by a prominent eastern specialist. The operation was well done, and every particle of diseased tissue was said to have been removed; but the woman had not long returned to her home before the disease recurred, and she rapidly went on to her grave. If the cases could be seen before the system is infected, before the involvement of any adnexa, before the disease has reached the vagina, or extended through the thickness of the uterine walls, or any of the cancer cells deposited outside, and operated upon, the disease might never return. Adenoma was in itself a malignant disease, but it might go on for several years with the woman having more or less trouble, and still there is no genuine cancer, so to speak, but when it does develop into cancer, the woman usually dies.

Dr. Geo. T. McCoy, of Columbus, said, as chairman of the Committee of Arrangements he had selected the subject under discussion for Dr. Reed, simply because, in his experience, there was nothing that gave the general practitioner so much trouble as hæmorrhage at or near the menopause. Another reason for asking Dr. Reed to read the paper was, that in a discussion before the Cincinnati Academy of Medicine, he (Reed) had read a paper upon the subject of fibroids, in which he made the observation that many women who were carrying fibroids of various sizes about without, apparently, any trouble, were rather a dangerous element in the community, for the reason that, while they themselves were suffering comparatively no inconvenience from these growths, many other persons were allowed to neglect operative or other means which might save their lives. He expected Dr. Reed to have dealt more with the subject of fibroids than he did in his paper. He hoped, however, in closing the discussion, he would touch briefly upon the diagnosis of hæmorrhage, and its causes at or near the menopause.

Dr. L. H. Dunning, of Indianapolis, Ind., said that one of the most perplexing class of cases with which the practitioner had to deal, were those women of 45 or 50 years of age who consulted him with reference to a severe hæmorrhage at the menopause—perplexing on account of difficulty of diagnosis, and perplexing on account of his inability to afford relief in a great many instances. We are unable to make a diagnosis to determine the cause of the hæmorrhage. Cases like this present themselves: A woman says she has profuse hæmorrhage, and that all remedies fail to give her relief. She is 45 years of age, and has never been irregular in menstruation, perhaps. How shall she obtain relief? In the absence of a fibroid tumor or cancer, he finds great satisfaction of late years in examining and treating these cases with the curette. Under such circumstances we found fungosities of the uterus. A case presented itself to him like this. About six months ago a woman came into his office, saying that she had menstruated continually for two years; that physicians had exhausted their resources and did not afford her any relief. No cancer; no fibroid. The cervix was dilated, and with a dull curette Dr. Dunning removed a large quantity of fungosities, which entirely relieved the patient. She has not menstruated since, and it is one year since the curettement was done. This one case might be taken as a type of many of the cases that present themselves to the practitioner.

Dr. Geo. W. Burton, of Mitchell, Ind., asked Dr. Reed how early, in cases of cancer of the uterus, could a correct diagnosis be made with the aid of the microscope; and if made early, would he advise total extirpation of the uterus?

Dr. Joseph Mathews, of Louisville, Ky., was very much entertained by Dr. Reed's paper. He would endeavor to answer the question of Dr. Burton as to whether it was possible to make an early diagnosis of cancer—he would not say of the uterus, rectum, breast, or anywhere else. Is it possible to do it? He might answer yes, sometimes. Upon three different occasions, happening within five months, patients had consulted him, giving plain evidence clinically of cancer of the rectum. Feeling that he did not know cancer when he saw it, he submitted specimens to the best microscopists in Kentucky. In each case the gentlemen returned him a note saying that the trouble was malignant. He then conveyed the sad intelligence to the nearest relative. Each one of the patients to-day was well.

While in New York a few weeks ago he picked up Harper's publication, and to his surprise, saw an article on cancer from Drs. William T. Bull and Curtiss. He was surprised because the article was written for that periodical, instead of for a medical journal. The next day he was invited by Dr. Wyeth to hear him read a paper before the New York State Medical Society. He went, and the gist of Dr. Wyeth's paper was that practitioners should write articles on cancer for these periodicals, the point being this, that if the female suffering from incipient cancer of the uterus could be forewarned at the time of the beginning of the tumor to consult her surgeon, the early removal of it would save her life. He believed this position was tenable. Do we ever see patients in this stage of the disease? He never had. He had been engaged in special surgery for fifteen years; he had excised cancers of the rectum, and had seen many of them, but had never yet seen a single case at the time when excision could possibly do any good. He had seen surgeons excise cancerous growths from the uterus, rectum, and other portions of the body, but the statistics, as far as recovery is concerned, were a little doubtful at least. The speaker did not hear that portion of the paper as to how many cancers Dr. Reed had removed. and how many got well; but he would ask him in the cases that he regards as recoveries, how long has it been since he did the operation? There was nothing that came before the surgeon to-day of such importance as the question of cancer. From time immemorial we had tried to find some specific for cancer, and that specific to-day is said to be the knife. Dr. Burton had hit the nail on the head when he said, "When can we make a correct diagnosis of cancer?" Ordinarily, in a general sweep, the surgeon would say all tumors should be removed, whether cancerous or not. This he believed to be good surgery, and in those cases with the symptoms that Dr. Reed had narrated, the speaker thought early excision would doubtless bring about a cure, but much depends upon where the cancer is located. When the surgeon excises a cancerous breast, how soon, if there be the least gland involvement, the disease reappears at the site of excision, or in other portions of the body.

Dr. Wathen had spoken of Dr. Burn's treatment by the thermo-cautery, and had given as fair statistics in the matter of recovery as any other surgeon who used the knife. Dr. Mathews believed this, because the surgeon, in his opinion, had done very little good with the knife, and he was satisfied that Dr. Burn with his thermo-cautery did little, if any, good. He could not be convinced that the application of the hot iron to a pathological structure could accomplish any good.

The speaker said Dr. Wathen had made a statement that should not go unanswered, which was, that all young girls up to 20 years of age, who suffered from irregular menstruation, should be examined, looking, he supposed Dr. Wathen meant, for cancer. He had been practicing medicine for twenty years, and had seen hundreds—yes, thousands of young girls with irregular menstruation. Perhaps a little attention to hygiene, to the bowels, a little exercise, getting up early in the morning, horseback riding, good food, removal of mental depression, etc., would overcome the irregularity of the menstrual function. He could never submit to the idea of a distinguished gynecologist saying that young girls who suffered from irregular menstruation up to 20 years should be examined. He desired to go on record as putting his foot on such doctrine as that.

Dr. Mathews was anxious to know if the essayist could tell cancer when he saw it, and how he could tell it; and *when is*, and *when is not* an operation justifiable? And then his statistics as to cures by the removal of the cancerous growth, and especially the length of time that had elapsed since he did the operation.

A Member: I would like to ask Dr. Reed as to the probability of cancer in a woman of 30 or 35 with leucorrhœa and profuse hæmorrhage?

Dr. C. A. L. Reed, in closing the discussion, said he simply desired first to express his gratification at the unexpectedly interesting discussion to which his brief contribution had given rise. It was extremely gratifying that a paper written merely for its suggestiveness should succeed in eliciting from able gentlemen their mature views.

He would like to say something relative to the position assumed by Dr. Wathen, but as that gentlemen was not present, and being a little apprehensive that he may have misunderstood him, he preferred to pass his remarks with a few words. He felt sure from his knowledge of Dr. Wathen's skill, judgment, and inborn gentleness, that whatever he may have said, he did not intend to convey the impression that he would examine every girl afflicted with irregular ienstruation. He believed his position was that cases of ersistent hæmorrhage, even in young girls, should be subected to an examination. and between persistent hæmorrhage and menstrual irregularities there was the widest posible difference. He believed that gynecologists who came aily in contact with disease involving the female generaive apparatus, who had to contend with the inborn modesty nd shrinking delicacy of womanhood and maidenhood, tood back till the last possible moment before enjoining ubmission to even a digital examination, particularly in oung women. When he reflected upon his department (gynecology) of practice, he believed his *confrères* were actuated in this matter by that sense of delicacy which should control gentlemen; hence many a case which might have been remediable in the early stages became irremediable.

As stated in his paper, he had not time to discuss the relative merits of the different operations for the relief of cancer. There were several operations, dividing themselves into two classes, viz.: total extirpation, and partial extirpation of the womb. He had fortified himself upon a position which he had assumed with extreme satisfaction to himself for the purpose of giving his patients the benefit of an operation the dangers of which were less than those of the others. He advised total extirpation of the womb. In doing this operation he was enabled to go beyond the probability at least of the invaded area of tissue.

As to the probability of cancer in a woman about thirty with leucorrhœa and profuse hæmorrhage, upon these two symptoms alone he would be loth to give a diagnosis of cancerous disease. Cancer, however, occurred in all ages, but it occurred with more frequency near the menopause. A patient having persistent leucorrhœa and hæmorrhage needs careful investigation.

In regard to Dr. Mathews' question, the speaker thought he knew cancer when he saw it, sometimes. Cancer could not be absolutely diagnosticated at sight in the earlier stages, but it could be done with a reasonable degree of certainty that would enable the practitioner to give the patient the benefit of a doubt. Dr. Mathews' observation, that the successful treatment of cancer depends largely upon the location in which it is found, was a correct one. There was no place in which its treatment was so successful as in the uterus when seen sufficiently early and operated upon promptly and properly. The presence of a little nodule did not mean cancer, nor an erosion of the cervix. A patient applying to the gynecologist for some such trouble should be kept under constant observation, say every other day for at least six weeks, and the erosion, or whatever it may be, treated with the probability of its being benign in character. Then, if it does not subside, but becomes progressive, spongy or fungous in character, with a gradual metamorphosis of the normal structures, the practitioner should pick out a small piece and submit it to a microscopist. This would doubtless furnish presumptive evidence, and putting that with the aberrant epithelial deposit in the interstices of the areolar tissue, or with an erratic deposit of cells of the epithelial type, the practitioner would then have reasonable ground for suspicion that his patient had cancer. The speaker tells his patients that they have cancer, and says so with deep chest tones of conviction for them to take the alarm and act accordingly. It was time for action, and action should be inaugurated promptly. If it be not cancer, the operation would not be necessarily fatal. If it be cancer, procrastination on the part of the practitioner might prove fatal.

First Day—Evening Session.

At this session an

ADDRESS OF WELCOME

was delivered by the Hon. Geo. W. Cooper (member of Congress) of Columbus, Ind., the response to which was made by the President, Dr. E. S. Elder.

Then followed the public address entitled Medical Heresies, by Dr. G. C. Smythe, of Greencastle, Ind.

At the close of the session there was a reception, followed by a banquet, tendered by the Bartholomew County Medical Society.

The social features of the meeting were excellent, largely due to the tireless efforts of Dr. Geo. T. McCoy and his associates.

Second Day—Morning Session.

Dr. H. M. Lash, of Indianapolis, read a paper on

POSTERIOR SPINAL SCLEROSIS.

He said posterior spinal sclerosis is a systematic disease of the cord, the posterior white columns—those of Gall and Burdach—being the affected parts. How is the sclerotic condition developed? Authorities are conceding that the condition is one primarily of hyper-nutrition. To comprehend fully the process, necessitates some knowledge of the arterial circulation of the cord. The pathological condition may be described as having three stages; 1. Hyper-nutrition, which multiplies the number of connective tissue cells, and forms new plastic elements; 2. atrophy of that new tissue; 3. destruction of the nerve fibres by compression.

The etiology is simply problematical. No definite cause or causes can be traced out. For a long time it was believed that it was due to syphilis, but that is being seriously questioned. There are two arguments against it; a. syphilis does not have a tendency to follow systematic portions; b. cures do not follow the most active anti-syphilitic treatment. The inherited tendency, without a doubt, plays an important part. But numerous exciting causes are named. It is a disease of the most active period of life, and occurs much more frequently among males than females. Occupations where there is much exposure to cold, dampness, fatigue, depressing emotions, surroundings incident to certain trades, where metals are used, seem to favor its development. The author's experience has been limited to three cases, all males in middle life, whose habits were active and exposed. One, a physician, who traveled nearly altogether on horse-back over a large rural district, in all kinds of weather. Another, a railway mail-clerk, with a long, busy hard run. The third was a locomotive engineer. Syphilis was suspected in one. This one has reached a fatal termination. The others are following the usual progressive history.

The methods of treatment have been numerous and all attended by quite uniform results, viz., failure. But this should not deter us from further efforts. So far, it is put down among those diseases having a gloomy prognosis. For that reason, investigators in this field are digging deeper for causes and for pathological facts, with the hope of bringing it within reach of remedial and curative agents. The present status is certainly more hopeful. This statement is based on the belief that the theory of hyper-nutrition, as a cause, is correct. That being accepted as true, the procedure in the first or forming stage is plain. Unload the over-distended tissues and keep back the excessive flow of blood to the parts. This may be accomplished, provided the condition is sufficiently early recognized, by the combined use of such internal agents and local and general applications as tend to contract the arterioles and deplete the parts by carrying the over-accumulation of blood to other and, as much as possible, distant localities. Administer ergot in liberal doses. Its effect will be materially aided by giving with it one of the bromides. Locally, apply to the spine cold water, or, what is more positive in its effect, ice, a bag of it along the portion implicated. Ranney recommends the use of hot water as a beverage, a gobletful an hour and a half before each meal. His object is to increase peristalsis, stimulate urinal secretion, produce warmth of the skin, and encourage perspiration. His idea of revulsion is a commendable one. But may it not be carried further with added advantage? Invite the circulation actively to the extremities and to the entire cuticle. This might be accomplished by a wholesale application of counter-irritants and frequent hot foot baths. But if the proper appliances are attainable, it can be better done. Put the patient through such a course of general warm packing as will dilate the entire superficial capillary system, so arranged that it can be carried to any desired or required degree, and free perspiration produced. Maintain it for twenty to thirty minutes each day. Follow it by rest for several hours in a comfortably warm bed with massage.

During the entire procedure, however, keep the ice-bag constantly applied to the spine. This will meet the objection to, and failure of, the hot bath alone. The amount of blood sent to the affected part will be thus diminished while it is increased in the general circulation.

The dorsal position should not be encouraged. Such patients ought to lie mostly on the side.

The stage of established sclerosis or marked incoördination calls for a modification of the treatment. Bromides are no longer serviceable, and the same may be said of ergot. Iodide of potassium probably stands at the head of appropriate remedies, especially if syphilis is suspected. By its use the disease may be kept, at least, in abeyance for many years. All complications, such as the severe pains, incontinence of urine, constipation and the like must be treated in an enlightened manner as a means of relief to the suffering patient. Belladonna or its alkaloid best controls bladder difficulties.

Dr. A. B. Richardson, of Cincinnati, expressed his gratification at the able and satisfactory manner in which the subject had been presented by the essayist. It was by no means an unimportant subject, and very much depended upon its early recognition. It was quite surprising how long cases of posterior spinal sclerosis would continue under the observation of general practitioners before the true nature of the disease was determined. He had been surprised at the stage in which some of the cases had been referred to him.

The complications were sometimes so very unhappy that if we could by early treatment retard the progress of the disease, it would be an important consideration. Some of these complications had not been dwelt upon by the essayist. A very melancholy one was that of optic nerve atrophy. The speaker had two cases under his observation at present, and he thought there was nothing sadder than to see one of these cases with progressive loss of sight and great difficulty in locomotion. Another complication, of great interest pathologically as well as clinically, was paretic dementia. He had seen quite a number of cases of this character. They were interesting pathologically because of the relationship between the pathological changes in the brain and in the cord. Many practitioners assumed them to be the same. Sometimes the clinical history pointed to the cord lesion as commencing previously to that in the brain. Sometimes the brain symptoms developed first. He was quite sure, as a result of observation, that the pathological changes in these two regions were not precisely the same at least, whether they were similar or not. The pathological changes in paretic dementia were more inflammatory in character; they were more acute, and ran a much more rapid course, resulting in degeneration and destruction of tissue. There was more rapid atrophy, greater softening, more complete disintegration and disappearance of the normal nerve tissue of both the cells and fibres in the cortical substance than is found in the spinal cord in locomotor ataxia; so that the relationship between the two diseases was exceedingly interesting. Why it was that locomotor ataxia developed in so many of these cases without paretic dementia had not as yet been satisfactorily answered.

The speaker, from personal experience, was not led to take as gloomy a view of the prognosis in these cases as some practitioners.

In the treatment of the disease, iodide of potassium was frequently advised and the most extensively used. This brought up the question of the relationship of the disease to syphilis. There can be no doubt but what there is some relationship between the two diseases. Most neurological authorities state that 50 per cent. at least, if not more, of the cases have a syphilitic history. Gowers, he believed, states that probably 60 per cent. of the cases of posterior spinal sclerosis had a syphilitic history; yet it is conceded, at the same time, that syphilis does not stand in the relation of a direct cause.

Dr. A. B. Richardson, of Cincinnati, Ohio, read a paper entitled

THE PATHOLOGY OF NERVOUS EXHAUSTION.

In summarizing the element in the pathology of nervous exhaustion, he said that the state of well-being in the animal economy depends upon the proper balance in every tissue and every organ between the process of waste and repair. The stream of organic sensations going from each tissue and each organ to the sensorium is the physical basis for this sense of well-being. These are chiefly, in a state of health, sub-conscious, instinctive, and have expression only as habits of activity of the various tissues or organs. When from any cause this healthy balance between waste and repair is disturbed, whether it be by a diminution in the supply of nutrient material or excessive demands upon a particular part, or by the toxic influence of retained waste products, or of the poisons of microörganisms, or constitutional vice, this sense of well-being is disturbed or destroyed. The cells of the sensorium are made unduly susceptible, and the stream of organic sensations from the various tissues and organs rise into consciousness, the results being subjective disquietude, unrest, mental depression, functional exhaustion, impaired assimilative capacity, a sense of conscious effort where none should be required, and a constant consciousness of a loss of energizing capacity. In the various forms there may be a cortical hyperæmia, or anæmia, or a simple blood dyscrasia. The result in each case is the same, the rejection of the supply of proper nutritive material to the cortical cells below the point which enables them to meet successfully the demands made upon them.

The cell changes in this stage of the disorder are molecular. By proper treatment they are removable. If allowed to continue, they result in cell degeneration and permanent deterioration or proliferation of cell function.

There is a strong tendency toward recuperation in the cortical cells, however, and they will often withstand prolonged abuses before they begin to show evidences of degenerative changes. The disorder is so gradual in its inception, as a rule, that it usually can be corrected before these changes appear, and there is not therefore much danger, with proper treatment, that serious or permanent mental derangement will follow. Exhaustion in the various subsidiary systems contribute, to the exhaustion of the cortical cells in the degree to which they contribute nutritive perversion. Of all the cases contributive to this state those which act directly upon the cortical cells in the way of overstrain, either by worry, or over mental exertion, are the most injurious. Underlying the whole system of causation and determining the influence of its various elements as the influence of the type of cortical cells. The susceptibility, inhibitory controlling power and recuperative power of the particular type determines the degree of vulnerability. Some types were essentially unstable and have slight power of resistance. Others have great susceptibility, but strong resistive powers, giving them capacity and strength; while still others with strong resistive capacity have but a limited susceptibility, giving safety but limited capacity for work.

Discussed by Drs. Lash, Reed, and discussion closed by the essayist.

Dr. L. H. Dunning, of Indianapolis, Ind., read a paper on

RECURRENT PELVIC INFLAMMATION,

in which he summarized as follows:

1. Recurrent pelvic inflammation is a mixed disease involving organs and tissues of widely different histological structure.
2. It usually begins in an endometritis, but in the end the Fallopian tubes, ovaries, pelvic peritoneum, and sometimes the pelvic cellular tissue are all more or less affected by the morbid process.
3. An uncured acute inflammation of any one of the organs or structures named above predisposes the patient upon the operation of an exciting cause to a recurrent acute attack. Each acute attack still more predisposes to subsequent recurrencies.
4. Suppuration in any of the structures involved may occur. It most frequently occurs in the Fallopian tubes.
5. Prophylactic treatment is the rational one.
6. Pregnancy and delivery are fraught with danger in patients who have recurrent pelvic inflammation.
7. Electricity aids in the promotion of the absorption of the exuded lymph before it becomes thoroughly organized into tissue.
8. When suppuration occurs operative procedures are indicated. The method of evacuating the pus or removing the pus cavity must be determined upon investigating each individual case.

Discussed by Drs. Reed and Dunning.

SECOND DAY—AFTERNOON SESSION.

Dr Joseph M. Mathews, of Louisville, Ky., read a paper entitled

ANTISEPTICS IN RECTAL SURGERY.

He said at one time he seriously doubted if the antiseptic treatment would obtain in rectal surgery as in other operations. Since he had fully tried the precautions and rules in this department of surgery, he was persuaded that, with care and attention to details, the same advantages could be obtained. Not only do we get quicker and better results by their use, but we also prevent septic infection, which sometimes forms wounds around the rectum. When we remember that it is not the size of the wound which controls the amount of sepsis, but the exposure to the cause, we can understand that the operation on a simple pile, whether by ligature, clamp, cautery, injection or otherwise, may result in septicæmia, tetanus, etc. When we remember, too, the large amount of blood that goes to the rectum, and the close continuity of the glandular system, it is no wonder that a septic infection can and does take place from wounds inflicted in this locality. It is a fact worthy of note that persons suffering from a malignant affection of the rectum, die often of rapid sepsis.

In the operating room Dr. Mathews uses the following articles:

Two earthen bowls, 2 earthen dishes, 1 irrigator, 1 bottle of Johnson & Johnson's bichloride of mercury tablets, 1 bottle carbolic acid, 1 package absorbent cotton, 1 rubber sheet, 1 bottle ligatures (silk), 1 bottle prepared cotton and gauze sponges, 1 small bottle iodoform, drainage tubes, 1 razor, 1 nail brush, bandages, bichloride gauze, iodoform gauze, 1 jug boiling distilled water, 1 waste water bucket, 12 sublimated towels, 1 dozen safety pins, 1 teaspoon, 1 chloroform, or ether, cone, 1 can vaseline, 1 hypodermic syringe, 1 bottle chloroform (Squibbs), 1 can ether, sulph. morphia tablets, brandy, nitrite amyl.

It may seem to some that this is a long list, and should there be those who would question the necessity of some of these articles, to such an one he would say, that if any one article in the list is left out, the day might come to the doubting surgeon, when he would wish that it or they had been included. When he looked back over his past surgical work, and remembered the death of a patient from tetanus resulting from the ligature of internal hæmorrhoids, he wonders, if he had remembered to have taken his little tablet of mercury, if the patient would have been living to-day.

Discussed by Drs. Reed, Dunning, Cook and Mathews.

Dr. Geo. J. Cook, of Indianapolis, read a paper on

REFLEX DISTURBANCES FROM RECTAL DISEASE.

He said three factors were essential for a reflex act, an afferent nerve fibre, a transferring center, and efferent nerve fibre forming a reflex arc. A very common reflex from rectal disease is pain over the posterior surface of the sacrum and coccyx. When this reflex exists, if the disease is limited to the lower part of the rectum, the patient will complain of pain at the end of the coccyx; if the disease is in the central part of the rectum, the pain will be in the center or lower part of the sacrum, and when the disease is in the upper part of the rectum the reflex will be in the upper part of the sacrum between the innominate arch. The location of the reflex will indicate the part of the rectum involved, demonstrating that the nerves to any part of the rectum and to the posterior surface of the vertebral column opposite these, are given off from the same point in the spinal cord, bearing the same relation as the nerves to a muscle and skin over it. The chief nerve supply is to the lower part of the rectum. The middle and upper parts possess comparatively little sensibility, yet in diseased conditions of them we see very severe and troublesome reflexes, causing the patient much more pain than the primary lesion. Disturbed heart action is a reflex which we see in connection with disease of the rectum, and especially with disease of the upper part. Irritation of the rectum will inhibit the action of the heart. This is demonstrated under anæsthesia. When the patient is thoroughly under the influence of the anæsthetic, and the sphincter muscles are stretched, it is not uncommon for the pulse to become quite weak for a time. It is surprising sometimes to see what extensive reflex disturbances will result from a comparatively slight primary lesion in the rectum, and again what extensive disease can exist, especially in the middle and upper parts of the rectum, without any manifestions reflex in character.

PALLIATIVE AND OPERATIVE TREATMENT OF ENLARGED PROSTATE.

Dr. William N. Wishard, of Indianapolis, Ind., read a paper on this subject, in which he said it is now well recognized that enlargement of the prostate produces appreciable symptoms only in a minority of cases. Also that while the majority of patients who have prostatic enlargement are men well advanced in years, yet it is not necessarily a senile disease.

The radical treatment of enlarged prostate contemplates the removal of obstructing growths. The cases reported by the author illustrated some of the forms of prostatic enlargement. They were reported with the belief that bladder surgery, particularly in the past few years, establishes the following principles:

1. That a large per cent. of cases of prostatic cystitis which are not susceptible of relief by the well known methods of palliative treatment, can be more or less permanently relieved by surgical interference.
2. That perineal and supra-pubic incision are the two methods best calculated to accomplish the results sought.
3. That neither one of these operations is suitable to all cases, and that both may sometimes be required.
4. That the object of a radical operation should be the removal of the mechanical obstruction to urination, and drainage and rest of the bladder.

Statistics thus far show that restoration of bladder function has followed in over two-thirds of the reported cases of removal of mechanical obstructions caused by prostatic growths and furnish occasion for careful study of all cases of prostatic enlargement, accompanied by the usual symptoms with a view to determining what cases are amenable to surgical relief, and what are the best means of solving the mechanical problems involved.

So far as the writer is aware, no effort has as yet been made to enucleate a lateral lobe through a median perineal incision. The perineal opening has been utilized chiefly for the division of prostatic bars and collars, and the removal of pedunculated middle lobes and nodular hypertrophies about the vesicle orifice. In one of his cases (No. 13) the writer was able, by dividing the mucous membrane covering the enlarged right lobe and dissecting it off with the finger, to remove the gland by piecemeal through a median perineal opening. The index finger of the right hand was the only instrument used after the opening was made. Counter-pressure was made with the first two fingers of the left hand, passed up the rectum, and pressed upon the upper end of the enlargement.

The specimen was presented.

If it be possible to determine before hand which operation — perineal or supra-pubic — will afford an opportunity to examine the inside of the bladder, we have gone far toward securing the data necessary to the selection of the form of operation best suited to individual cases. In determining beforehand, we have no means of securing positive evidence, but there is already accumulated sufficient experience to afford valuable indications in the selection of the operation probably best suited to the individual cases.

(*a*) It appears in the very valuable collection of 133 cases by Belfield of operations upon the enlarged prostate, that the perineal operation is somewhat safer than the supra-pubic.

(*b*). Inability to reach and explore the bladder by a perineal opening is said to exist in about thirty per cent. of all cases.

(*c*). Where it is possible to reach and explore the bladder by perineal incision, it is not generally possible to do so with the same thoroughness as by a supra-pubic incision.

(*d*). Where there is an elongated prostatic urethra, it is generally associated with a rectal tumor of large size, and the increased length of the prostatic urethra and the consequent increased perineal distance, is approximately indicated by this fact and by measuring the distance with a catheter from the meatus to the point where urine is obtained. A large rectal tumor was accompanied by an elongated prostatic urethra in all of the author's cases.

On motion the Society adjourned to meet July 2 and 3, 1892; place of meeting to be decided by the officers.

NECROLOGY.

Dr. Gideon S. Palmer, M.D.

Dr. Gideon S. Palmer died at his home, 1113 Massachusetts avenue, Washington, D. C., Dec. 8, in his sixty-ninth year. Dr. Palmer's illness was of protracted duration, and his death was not unexpected.

Dr. Palmer was born in Gardiner, Me., June 14, 1813. When a young man he taught the Lyceum at Gardiner, and fitted himself for college. He graduated from Bowdoin College, Maine, in the class of 1838, and afterward studied medicine in Philadelphia. He served his native city as councilman, alderman, representative in the State legislature, where he was associated with Secretary Blaine. At the beginning of the late war he enlisted as a volunteer surgeon, serving as brigade surgeon on Gen. O. O. Howard's staff in the Army of the Potomac. He was in charge of Lincoln Hospital, of a hospital at Annapolis, and retired with the rank of brevet lieutenant colonel.

In 1869, at the request of General Howard, Dr. Palmer took the chair of physiology and hygiene in the medical department of Howard University. He was for many years dean of the university faculty and surgeon in charge of the Freedman's Hospital. He leaves a widow and son, who were with him at the time of his death.

Dr. Robert Alexander Kinlock, of Charleston, S. C., died December 23, in his sixty-sixth year. He was the professor of surgery as well as dean of faculty, in the Medical College, ex-president of the Medical Society of South Carolina, formerly vice-president of the American Medical Association and first surgeon to the Roper Hospital on Queen street. He was at one time editor of the *Charleston Medical Journal*. During the war he served the Confederate forces as medical examiner, inspector of hospitals, and medical director of the southeastern department. He was a contributor to the local periodicals and to the *American Journal of Medical Sciences*, chiefly on surgical and epidemiological subjects. He was an associate member of the Philadelphia College of Physicians.

By birth, Dr. Kinlock inherited both Scottish and Welsh traits; by education he was cosmopolitan, having besides his training at home and at the University of Pennsylvania, a considerable term of study in the hospitals of London, Edinburgh and Paris; by his personal character and the fine temper of his intellect he was worthy to be filed in the Brahmin class, as it has been outlined by Dr. Holmes. His place will not readily be filled.

Dr. Levi Olmstead Wiggins.—The death of Dr. Levi Olmstead Wiggins, of Newburg, December 27, in his twenty-sixth year, removed a promising junior member of the profession. He was a Yale valedictorian and Larned prizeman in 1885. He took the Harsen prize at the college of Physicians and Surgeons in 1888. He was a year at Roosevelt Hospital, and had spent a year in Europe at the cliniques of London, Dublin, Berlin and Vienna. He returned home last spring with impaired health, from pulmonary disease, and was unable to rally therefrom.

The *Lancet* (London) says that without the foundation of a good, sound general education, a medical man will be at a disadvantage permanently throughout life. He may do well, but he will never do his best; and to no one will the disadvantage be more painful than to himself. This is the chief disadvantage now of our profession. The study of medicine is a commanding study, and those who prosecute it should have the highest influence in the community. If they have not, it is largely due to defects in general culture which hinder the full use of their professional advantages and the best expression of their professional knowledge.—*Amer. Lancet.*

MISCELLANY.

Ohio Legislative Committee.

Columbus, O., December 3, 1891.

Pursuant to call issued by the Cincinnati College of Medicine and Surgery for a delegated convention of the medical colleges of the State of Ohio, to be held at Columbus, on the date above mentioned, representatives of the following faculties were present, viz.: Starling Medical College, Toledo Medical College, Pulte Medical College, Columbus Medical College, Medical Department of the National Normal University, College of Physicians and Surgeons of Columbus, Women's Medical College of Cincinnati and the Cincinnati College of Medicine and Surgery.

On motion, Dr. Starling Loving was elected Chairman and Dr. Charles A. L. Reed, Secretary.

On motion of Dr. C. E. Walton, representatives of the Physio-Medical Society, of Ohio, were admitted to a vote in the convention.

Dr. Charles A. L. Reed presented the following:

Resolved, By the Medical Colleges of Ohio in Convention assembled, that the Legislature be and is hereby requested to enact a law which shall embody the following features, viz.:

1. The creation of a board or boards of medical examiners in the composition of which equitable and just representation shall be accorded to the various recognized denominations of medical practice.
2. The examination of all candidates for the practice of medicine holding diplomas hereafter issued by medical colleges which shall be deemed in good standing by the board.
3. Exemptions from examination to extend only to those who, at the time of the enactment of this law shall be recognized as legal practitioners within the meaning of existing statutes; but all legal practitioners shall be required to register.
4. A penal clause which shall secure the enforcement of the foregoing provisions.

Dr. C. E. Walton, on behalf of the Legislative Committee of Cincinnati, presented the registration law approved and promulgated by that committee.

On motion by Dr. Shockey, the resolutions presented by Dr. Reed were approved.

On motion by Dr. Kinsman, the secretary was directed to forward transcripts of these proceedings to each local medical society in Ohio, and to the medical press.

On motion by Dr. Scoville, a committee was appointed to confer with the Legislative Committee of Cincinnati for the purpose of securing such changes in the bill proposed by that committee as to make it conform to the resolutions adopted by this convention.

The chair appointed as such committee,

Drs. S. S. Scoville, T. C. Hoover, G. W. Mayhugh and Chas. A. L. Reed.

Adjourned.

Charles A. L. Reed, Secretary.

Starling Loving, Chairman.

Golden Belt Medical Society.—The winter meeting of the Golden Belt Medical Society, will be held at Salina, Kas., Thursday, January 7th, 1892.

Programme, afternoon session, 3 o'clock.

1. General Order of Business.
2. Paper by T. B. Ross, M.D., Abilene.
3. "Report of an Interesting Surgical Case," J. W. Crowley, M.D., Salina.
4. "Report of Cases in Practice," H. V. Boyce M.D., Bennington.

Evening Session, 8 o'clock.

1. "Etiology and Treatment of Scarlet Fever," T. N. Gunn, M.D., Chapman.
2. Paper or Report of Cases, M. B. Ward, M. D., Topeka.
3. "Shall We Operate in Damaged Tissues," P. Daugherty, M.D., Junction City.
4. Subject for General Discussion: "Epidemic Influenza."

Errata.—In our last issue it was our pleasure to publish the list of members of The Association and subscribers for The Journal. In some instances we were not able to fill out the date of membership, and in some cases the dates given we believe to be wrong, although they were printed according to the list found in the office. We hope the members will let us know of such errors in order that future lists may be made as perfect as possible.

The *Times and Register* will continue to be published in Philadelphia.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from December 19, 1891, to December 25, 1891.

Capt. Edwin F. Gardner, Asst. Surgeon, is relieved from further duty at Ft. Porter, N. Y., and also from temporary duty at Ft. Columbus, N. Y., to take effect upon the arrival at that post of Capt. Walter W. R. Fisher, Asst. Surgeon, and will then proceed to Ft. Mackinac, Mich., for duty. By direction of the Acting Secretary of War.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending December 19, 1891.

Surgeon P. H. Bailhache, detailed as chairman of board for physical examination officer, Revenue Marine Service, December 17, 1891.

Surgeon G. W. Stoner, granted leave of absence for twenty-two days. December 16, 1891.

P. A. Surgeon H. R. Carter, to proceed to South Atlantic Quarantine for temporary duty. December 10, 1891.

P. A. Surgeon C. E. Banks, to inspect unserviceable property at Marine-Hospital, Baltimore, Md. December 10, 1891.

P. A. Surgeon S. C. Devan, to proceed to Montreal, Canada, on special duty. November 30, 1891.

P. A. Surgeon W. J. Pettus, to report in person to the Supervising Surgeon-General. December 3, 1891. To proceed to Newbern, N. C., on special duty. December 12, 1891.

P. A Surgeon H. T. Goodwin, granted leave of absence for ten days. December 2, 1891.

Asst. Surgeon J. B. Stoner, granted leave of absence for seven days. December 18, 1891.

Asst. Surgeon A. W. Condict, granted leave of absence for seventeen days. November 30 and December 15, 1891.

Asst. Surgeon G. W. Guiteras, granted leave of absence for ten days. December 15, 1891.

Asst. Surgeon W. G. Stimpson, granted leave of absence for ten days. December 2, 1891.

Asst. Surgeon B. W. Brown, detailed as recorder of board for physical examination officer, Revenue Marine Service. December 17, 1891.

Asst. Surgeon L. E. Cofer, granted leave of absence for fifteen days. December 15, 1891.

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ORIGINAL ARTICLES.

A SHORT STUDY IN THE THERAPEUTICS OF CHRONIC DISEASE.

BY W. W. VAN VALZAH, A.M., M.D.,
OF NEW YORK.

The results of the surgical treatment of disease are palpable and often brilliant. The wonderful achievements and rapid advances of modern surgery are manifest, and its results can be built up into statistics that will not yield to skepticism's destroying touch. It is not so in medicine, more particularly in the therapeutics of chronic disease. The surgeon believes in the knife because he knows its power, recognizes its limitations, brings other powerful means to its aid, and proceeds in a way often clearly marked out in every detail, to the accomplishment of a definite purpose. The physician's skepticism is born of the obscurity of therapeutic results, faulty and narrow methods, a failure to recognize the limitations imposed by the nature and stage of the morbid process, and a too ready belief in the unaided power of drugs.

Medical statistics are deceptive, and ultimate results come slowly and are conjectural. Our greatest triumphs are in the prevention and control rather than the cure of disease, and the entire good that we do cannot be known. We can check the advances and limit the ravages of chronic disease, and it is our duty to see to it that therapeutic nihilism does not sweep away every landmark and light, and leave us standing with folded arms by the bedside.

Whenever we fail, it is well to pause and consider whether our investigations have been thorough and our purpose clear and comprehensive. And right here most of the trouble lies, for in the rush of work we do not survey the whole field, and the treatment fails because it does not include enough. It must not be directed solely to the symptom group, nor be controlled by the morbid anatomy alone, nor find its only guide in the perversion of the physiological processes. Curative therapeutics must go beyond the symptoms and morbid tissue changes, to the disturbance of the normal relations that cells or aggregates of cells, or the organism, bear to their surroundings. It is the altered chemical reactions and cell relations that make up the canvas on which the clinical picture is painted in the colors of morbid anatomy.

Disease is in its primitive nature a perversion of force, which defines the fixed pathological changes and often dominates the symptomatic expression. This fundamental fact must be clearly recognized before therapeutics can claim to be a science rather than an art, based on the contradictory testimony of experience. It must be grounded in the unchanging laws of physics and chemistry and biology, and find its expression in the terms of force. A system of therapeutics must be broad enough to include the indications afforded by the nature of the incident disturbance, by the perversion of the physiological processes, by the death, degeneration or new formation of tissue, and by the gross symptoms. Every indication may find its place in our plan, and failure in the end crown our efforts because we try to accomplish too much. It may be well to go somewhat into detail, and define some of the necessary limitations of the therapeutics of chronic disease. It would be of value to know precisely what we may attempt to do.

It may be hoped that we shall some day be able to directly endow special cells with particular powers and activities, and the fond hope is not without some foundation. Recent advances lead us to expect that immunity may yet be given against infectious diseases, and certain drugs seem to have a selective affinity for special cells. However this may be, in the present state of knowledge, cell life can only be appreciably influenced or controlled by modifying its environment. The exclusion of bacteria from the wound fluids localizes injuries, and makes healing easy and natural, and the same law is applicable in the management of every form of infectious inflammation. The incident disturbance must be excluded or removed. This principle has a very wide application in the prevention and cure of autoinfection, and is of the greatest value in the treatment of the diseases of the digestive system. In chronic metallic poisoning, as by lead, arsenic or mercury, and in most of the secondary diseases, the treatment is chiefly etiological, directed against the incident disturbance.

Many cases of chronic disease arise from the persistent and almost imperceptible disturbance of the continuous adjustment of relations as manifested in the life processes—the integration of structure, the evolution of force, or the elimination of waste products. The various diatheses are examples of chronic states or evil tendencies indelibly stamped upon the organism in the process of its making. Now it is a predisposition to the development of certain low forms of inflammation—a vice of constitution in which the tissues yield readily to incident disturbance, and have little constructive power. Or it is a defect of nutrition in which the power to assimilate fats is in abeyance or lost, and force production going on at the expense of the proteids of the body, the weak organism, further depressed by the presence of the incompletely elaborated products of tissue waste, falls an easy prey to bacillary or other disease. Now it is the fibrous tissues of the body that show the least resistance. Or it is a hæmic or hepatic state that crops out in the form of gout. Now it is a fault of the more highly evolved nerve centres, and the patient falls a victim to insanity, or is skilfully conducted through life on a sleeping volcano. These evil tendencies cannot be eradicated by treatment, and our purpose in therapeutics goes no farther than the prevention or control of the manifestations.

Again, the therapeutics of chronic disease is limited by new tissue formation, by destruction of the anatomical elements, and by deformity.

In acute disease, the incident disturbance falls directly on the functionating cells, which recover or redevelop more or less completely when the morbid influence passes away. In chronic disease, the secreting, eliminating or discharging cells are commonly involved indirectly by the formation of new tissue and compression. The new tissue may simply irritate instead of destroying the cells, as in the recurring violent cortical discharges of certain cases of epilepsy. Now when new connective tissue develops, and is so related to the anatomical elements of the various organs or viscera as to compress them while it undergoes contraction, it may well be doubted whether treatment directed against the local process as represented by the morbid anatomy, does any good whatever, unless it hereafter appears that exception must be made of specific cases. Even when syphilis is known to be the underlying cause, no well authenticated case of cure is on record, so far as I have been able to ascertain. The therapeutics of chronic disease is thus limited by the nature and relations of the newly formed tissue. Our therapeutic purpose should be to remove, when possible, the underlying causative condition—the alcoholism, lead poisoning, syphilis, gout or mycosis; to correct the morbid process, and secure the early absorption of inflammatory products by increased activity of the eliminating organs, by promoting nutrition and the resistance of the tissues, and to restore the lost equilibrium by encouraging compensatory action, and by diminishing the work of the damaged organ.

Chronic disease, again, often arises from a deformity, or from the destruction, or degeneration, or atrophy of the anatomical elements of an organ. The persistence of the symptoms is due to the persistence of the damage done by former disease. A cure is possible only while the morbid process is active. A chronic endocarditis may resolve, but a valvular deformity left by past inflammation is beyond the restorative powers of medicine. We can do nothing to remove the deformity. And when compensation fails, the disturbance of the arterio-venous equilibrium must be met by increasing the power of the heart, and diminishing its work—by a tissue-building diet that does not add to the deposition of fat, a diminution of fluids, and a quiet life, as free as possible from care and strain, and by a judicious use of saline purgatives, heart tonics and arterial dilators, not waiting through dread of exaggerated danger until the lungs, kidneys and digestive organs are damaged beyond repair. When, in syphilitic endarteritis, an embolus or thrombus has closed a terminal cerebral vessel, or the arterial wall has yielded to high tension, and the shock of the onset is over, we can do little more than push the iodides, and hope for a little compensatory action from the opposite hemisphere. We can do nothing to restore the channel through which nutrient material once passed to its destination, and the area of brain tissue is *already functionless* and undergoing softening—is practically destroyed. When chronic disease falls directly on the anatomical elements of an organ, it is commonly a degenerative process, and if the cells be reproduced, they are weak and imperfectly organized. When glandular atrophy falls upon the snows of age, little can be done to stay the progress of decay; life slowly dissolves beneath its burning rays. But when glandular atrophy from local or infectious disease encroaches upon the strength of youth, as in the gastric atrophy following typhoid fever, or the intestinal atrophy resulting from prolonged distension by the gases of fermentation, treatment is limited, but of some avail. A thorough diagnosis defines and limits therapeutics. But we do more than we know, or are able to explain—we never stand powerless by the bedside. In the hour of transcendent need, the physician, standing *in the dim twilight*, bends forward into the darkness to strengthen and to bless.

Having briefly indicated how a thorough knowledge of disease defines and limits our therapeutic purpose, turn we now to a consideration of the means that we hold in our hands for its accomplishment.

Our therapeutic purpose in chronic disease is never so simple or so narrow as the prescription of this or that drug—it is the combination of many means to meet complex indications, the treatment of the whole man as disturbed by disease. As we grow old and gray in the service of our calling, the less do we rely on drugs alone. By *the proper use of the right drug*, we can often snap the thin spun thread of evil sequences, and we will not be persuaded to cast away means of such power and precision. I believe that our object is best accomplished by a systematic combination of means, and it is the union in which "all are needed by each one," that gives the victory. And our first aim should be the promotion of a high degree of healthy nutrition, with a view to increasing the resistance and activity of the tissues; and secondly, the regulation of the patient's life with a view to the readjustment, in the most favorable surroundings, of the damaged organism to vital demands; and in the third place, the rational use of drugs as based on their physiological actions, and as confirmed by clinical experience. This forms the great tripod of treatment.

If one will take the trouble to turn through medical literature, he will be surprised to learn the conspicuous part which has always been assigned in etiology to "impairment of general health." In many cases of acute disease, the most robust constitution yields to the shock of the violent onset. But it is more often the weak and tired who are forced to the wall, a fact abundantly confirmed by the statistics of epidemics. But a well nourished body not only resists invasion; it also limits and conditions and controls the morbid process—has a curative power. A problem to solve in every case of chronic disease is the problem of nutrition, and upon its solution depends the possibility of relief. Who treats chronic disease with success must be a master of dietetics. And it is not enough to adapt the quantity and quality of the food to the vice of nutrition we wish to correct, or the state of nutrition we wish to establish, though this is of very great importance. It is not enough to adapt the quantity and quality of the food to the present state of nutrition, the capability of the digestive organs, the activity of the emunctories, and the evolution of force as conditioned by habits of life and environment—though if this be not done, success will rarely crown our efforts. But the patient must be kept under daily supervision, and the physician must see that the diet is fulfilling its therapeutic purpose, and readjustments be made to meet the varying indications. If the patient will not or cannot submit to this long and costly supervision, he must go on his way under the delusion that all and the best that can be done is being done for him. The diet must be prescribed on comprehensive scientific principles, with a clear and well defined object in view, and be brought to the test at the bedside, for the clinical test is supreme, and educated common sense must count for something in the dietetic management of chronic disease.

It is not enough to send to the cells a fluid rich in oxygen and in nutrient material, but it must also be free from poisonous products from the portal system and pulmonary veins. The circulation of a pure and rich lymph must be active, so that there be no accumulation of cellular waste. Active oxidation is a strong barrier against autoinfection, if the poison succeed in passing through the liver. But the one great remedy for autoinfection is free elimination by the kidneys, bowels and skin. The best diluent, the best solvent, the best diuretic, is a plentiful supply of fluid—and to liquefy the bile and promote its discharge, to excite peristalsis and clear the alimentary canal, this fluid should be taken hot, in which salicin and a saline may be in many cases with advantage dissolved. In the Cavendish Lecture of 1891, Dr. T. Lauder Brunton speaks of the great value of hot water in the treatment of gout and rheumatism, and lithæmia. The use of cholagogues, diaphoretics and diuretics—especially the natro-benzoate of caffeine—will prove of some value. To secure a high degree of healthy nutrition we need a rich, actively circulating and pure lymph. Every cell must have a clean lymph in which to bathe, and from which to draw its life and strength.

Second in importance only to careful alimentation and active elimination, are the control of the habits of life and the selection of favorable surroundings. Here the indications are so special in individual cases, that little can be said in a general way, and much must be left to the physician's common sense and experience. Under this heading must be included many remedies the value of which is well recognized—a favorable climate, pure air and sunshine, exercise, rest with or without massage, a contented and hopeful mental state, etc.—all contributing to the ease or activity of the circulation, of respiration, and briefly and in a general way, of all the secretory, excretory and nutritive processes.

The tendency of modern drug treatment is local and special. In addition to local antiseptics and local applications as indicated by perverted cell activity in its various manifestations, we have also drugs that tend to keep the fluids of the system sweet, and that affect one or more of the functions of an organ in a special way. We have no so thoroughly efficient local treatment that it cannot obtain some help from constitutional measures, and we should not forget the remedies that aid nutrition, regulate elimination and control neuro-muscular discharges. Drugs that relieve gross symptoms are also of very great value. Pain is in itself an evil, and a drug like opium is curative by conserving vital energy and preventing shock. A persistent high temperature is very destructive, and must be controlled by antipyretics. Many symptom drugs render valuable service in emergencies. But to the aid of drugs must be brought other and more powerful means—the promotion of a high degree of healthy nutrition, free elimination, well ordered habits of life and a favorable environment. Here lies the hottest of the battle, and the hope of victory.

In the management of chronic disease, tact and common sense are worth almost as much as medical knowledge. The course is a long one, and tests the endurance of the physician. I would emphasize the importance of long continued supervision, and minute instructions. The physician, as does also the surgeon, succeeds most often when he is a strict observer of detail, when he knows and remembers and does little things.

My plea is for a broad, and comprehensive, and well defined therapeutics; a plea for the paramount importance of hygiene and dietetics; a plea for the considerate use of drugs; and finally, a plea for the close study of this highest compartment of medical knowledge, in which science and art lie down together.

10 East 43d St.

PARALYSES FOLLOWING ACUTE DISEASES.

BY JOHN FERGUSON, A.M., M.D., Tor., L.R.C.P., Ed.

DEMONSTRATOR OF ANATOMY AND LECTURER ON NERVOUS DISEASES, UNIVERSITY OF TORONTO MEDICAL FACULTY.

There are some varieties of paralyses that follow acute diseases which present some features of great interest. This interest can never cease until the true pathology underlying these cases has been fully worked out. My remarks on the present occasion are with the view, that though they may not settle, they may suggest the lines on which some of these cases may yet be solved. In doing this I shall appeal almost entirely to my own cases. First let me lay down the general ways in which acute diseases may be supposed to act on the nervous matter.

1. That these paralyses are due to the direct action of the virus of the disease.

2. That they are due to some poison left in the system by the disease; and that acts after the disease itself has disappeared.

3. That they are due to some other poison that acts conjointly, or in association, with that of the disease, but may act on those who have not had the disease.

To each of the above views I shall have occasion to refer, from time to time, as the cases are recorded.

The first case to be mentioned is one where the paralysis affected the muscles supplied by the anterior tibial nerve. It began four weeks after complete recovery from the measles; and advanced until the tibialis anticus, the extensor longus digitoreum, the peroneus tertius and the extensor proprius pollicis were almost completely atrophied. There was extreme reaction of degeneration. In six months from the onset of the paralysis there was a fair amount of recovery. The calf muscles, however, did not find sufficient opposition, and underwent some contraction, which was relieved by cutting the tendo Achilles.

This case would seem to point clearly to view No. two, as the correct explanation. We could hardly suppose any of the real materies morbi of the disease still existing within the system four weeks after the disease itself had disappeared, and desquamation had been completed; and, at a date when no one would regard the person as still carrying any contagion. If this person had reached the time at which we would suppose that there were no longer any of the germs of the measles in her system, before the paralysis began, it is only fair to suppose that the paralysis was due to some agency or poison that was left in the system by the measles. Under any circumstances the third view, I think, cannot be maintained.

A second case of very great interest occurred in a patient of mine after an attack of typhoid fever. The attack of typhoid fever was of an ordinary character, and presented no special features. It was, if anything, on the mild side. The patient made a good recovery, and went home to the country to recuperate. His health and strength were returning in a very encouraging manner. One day he went out, when it was wet and cold. This was fully six weeks after he had left the city for his home. After the exposure above mentioned, paralysis began to develop, which rapidly assumed the form of a polyneuritis. In addition to the usual features of multiple neuritis, there came on those of bulbar paralysis. This, along with the neuritis, steadily became more and more aggravated. About a month prior to death there was considerable dementia. The whole duration of the paralysis was, almost to a day, six months.

It would be difficult to maintain the first view of these cases; and still more difficult to uphold the third. One of two solutions may be offered to explain this case. The first, that the typhoid fever had weakened the nervous tissue and the exposure to the wet and cold upset their nutrition, and started the chain of pathological processes that ended in the patient's death. The other explanation is that there was in the system some poison; and the cold and wet either intensified its action or suddenly arrested its elimination. This, I think, is more likely the correct opinion; and would therefore fall under the second view of these paralyses after acute specific diseases; namely, that they are due to some poison in the system, which, after the disease itself has disappeared, continues to act.

The third case I shall record was that of a young married woman. She had a very severe attack of diphtheria, with very abundant formation of membrane. She recovered, and was well enough to call at my office on August 11, then feeling well, but looking rather pale and anæmic. I was sent for to see her on October 1, when I learned that she was complaining of numbness and weakness in the hands. She had been out two days prior to this, and had gotten wet and fatigued. Up to this date there had been no paralysis. The paralysis rapidly extended, involving all four extremities, the muscles of respiration, and finally the diaphragm failed. The patient died on the twelfth day of this illness. Now it would be rather difficult to say that this was a case of paralysis due to the direct effects of the virus of diphtheria. While this is so, it would be, I think, impossible to exclude the causal relationship between the diphtheria and the paralysis. The fact seems to be correctly expressed in the second proposition, that there was left in the system some poison, other than the actual virus of the disease, which did the mischief on the nervous tissue. It is worth noting that in this case, as in the typhoid fever one, there is the history of wet and cold. This may be a mere coincidence, however, or it may show that it had something to do in the way of increasing the activity of the poison, or shaking a weak nervous system. In this case there was seven full weeks from the date on which the patient was able to call at my office after recovery from the diphtheria, and the commencement of the paralysis. This is a sufficiently lengthy period to probably exclude the direct action of the specific poison of the disease.

A fourth case of paralysis following acute febrile diseases, is also an example of the diphtheritic form. The patient, at the time of the attack, was 60 years of age. She contracted the disease while attending her niece. The attack was a severe one, and was marked by a very abundant formation of membrane, and much asthenia. The membrane had not fully disappeared from the fauces when there began distinct facial paralysis, with tingling in the lips and tip of the tongue. In two days there was much difficulty in swallowing, from paralysis in the pharynx. Concurrently with these symptoms, there were paræsthesia and loss of power in both hands and feet. The facial paralysis lasted three weeks, and the pharyngeal only one week. She could always swallow pulpy food, but with great difficulty. The heart and respiration remained unimpaired. The paralysis in the four extremities steadily increased. There was constant tingling of a very distressing character. The muscles were extremely tender to pressure, and the bed clothing had to be supported. The paralysis and anæsthesia extended until the muscles and integument of the back and abdomen, as far up as the umbilicus, became seriously involved.

In this case the nerve disturbances commenced during the actual existence of the diphtheria, and it is only fair to conclude that they were due to the direct action of the poison of the disease, rather than to the action of some other poison left in the system. Indeed, the second and third views are practically excluded. This patient ultimately made a good recovery, being able to walk pretty well in eight months from the beginning of her illness. There were marked muscular atrophy, loss of reflexes, and reaction of degeneration.

The fifth case was that of a boy, aged 17 years, who died on the eighteenth day of an attack of diphtheria. As the membrane began to wear away, the fauces and pharynx began to fail in power. The pupils became widely dilated and stationary. The respiration and heart were much lowered in strength. The pulse was frequently reduced to 30 and 32 beats per minute. After giving a stimulating enema, the beats would increase, and sometimes become as frequent as 80 per minute. He died of cardiac failure, purely of a paralytic type. This case, I think, would fall under the first condition, namely: that the paralysis was the direct result of the poison of the diphtheria.

My sixth case, one of typhoid fever, comes in this class also. The patient, a young man, had an ordinary attack of the above disease. During the period of defervescence, but before the temperature had on any occasion reached the normal level, he complained of paræsthesia in the hands and feet. Along with this there was motor loss. The polyneuritis increased, and covered a period of seven months before the patient was out of bed. This case would seem to be one where the paralysis was due to the true poison of the fever, and not to some other poison; for the paralysis came on while the fever was still in existence. It could not well be regarded as due to any form of *associated poison*.

The seventh case of paralysis in this list, followed an attack of la grippe; or rather occurred during the attack. The patient, a healthy young man and a student, was taken ill with influenza during its prevalence in 1890. He made light of the attack for the first few days, and only gave the matter attention when, in attempting to walk, he found his power of locomotion almost gone. On visiting him, I found considerable paresis. He had not then been ill altogether one week. There was tingling in hands and feet. The muscles, particularly those of the calf, were tender to pressure. The knee reflex was much weakened, but the plantar and cremaster reflexes were still normal. The paresis increased until he could not raise himself on his elbows, nor turn in bed. The sensation of the hands and feet was impaired, and the knee-jerk became almost lost on the left side, and entirely so on the right. The bowels were constipated. The respiration was slow, and the heart, for over a week, ranged from 30 to 40 beats per minute. It then gradually improved. For several weeks the intellect was very slow. Thought was torpid, the patient requiring considerable time to collect his thoughts in responding to a question. The patient was able to walk in eight weeks; but it required as many months before all pseudo-ataxic movements had disappeared in walking. In this case the paralysis was the first symptom of sufficient note to attract the patient's attention. Indeed, the nerve symptoms began at once with the prime disease, and were no doubt due to the influence of the same virus as that of the influenza.

The eighth case was one following close upon an attack of influenza, and occurred during the epidemic of 1890. The young man had an attack of this disease. In a week, or ten days at most, after he got about again, the paralysis began. In the early part of September of the same year, he was brought to my office by his brother, who was a medical student, and a member of my class. I learned from the patient that his paralysis, both sensory and motor, was thought to be due to some trouble in the medulla oblongata, and that the back of his neck had been severely blistered, and had had a seton inserted into it. It was a case of undoubted multiple neuritis. The paralysis, coming on as it did in a week or ten days after the influenza, is pretty strong grounds for supposing that it was the result of the materies morbi of la grippe, and not that of some other accompanying or following toxic agent. In other words, that it was a case that harmonized better with the first view than with either the second or the third.

In the *Gaz. Hebdom.*, Nos. 20 and 21, 1881, M. Boissarie describes a series of cases where there was paralysis in persons who had not had diphtheria, during an outbreak of the disease. His opinion was that there was some associated poison that accompanied diphtheria, and caused paralysis even though the paralyzed person had not had an attack of diphtheria. In other words, that diphtheria patients may communicate to others some infection that gives rise to paralysis and albuminuria, and not to the sore throat, or formation of membrane. On this extremely interesting question I shall make some remarks, and record a few cases.

The ninth case was that of a girl aged 18 or 19 years. She was living in a family where there were three very well marked cases of diphtheria. She had no symptoms of the disease; never had the least sore throat. On visiting the house one day, she complained of not seeing well. I examined the eyes and tested the sight. There was distinct cycloplegia. Vision for near and small objects was much impaired. There was albumin in the urine in small amounts. No other paralysis ever appeared, and vision was again normal by the end of nine weeks. All the reflexes were natural. Now this case of paralysis had all the appearance of one following diphtheria. Are we justified in saying that this young woman did not have an attack of it? I do not think that we are. To my mind, diphtheria is a constitutional disease, and not merely one of the throat. We may meet with cases of scarlet fever without a rash; and in like manner with cases of diphtheria without sore throat. Diseases do not always follow a fixed and absolute clinical formula. Here we have most likely an example of the disease in a masked form. The specific poison had entered the system, and produced albuminuria, and some local paralysis. It is quite reasonable to suppose that this girl could have communicated diphtheria to others, as well as another case where there was distinct angina. In the case of scarlet fever without the rash this is the case; and from such an example other cases may spring where the rash is abundant.

Tenth case in a boy of 13 years. His sister, two years younger, had a sharp attack of diphtheria. On the twenty-third day after I had made my last visit to the sister, the brother called at my office. He had then decided paresis, with tingling and numbness in his hands. The pupils were dilated and accommodation deficient. The closest questioning failed to reveal the least history of diphtheritic sore throat. Here was the paralysis, however, and the certain knowledge of exposure to the sister's case rendered the presumption convincing that the brother also had suffered from an attack of the same disease. The sister had diphtheria in unmistakable form, without after paralysis. The brother had the disease in disguised form, and unnoticed; while he suffered from the post-paralysis. This case falls in the group described by M. Boissarie, and comes, as well as the ninth case, under the third view of these cases, as advocated by some authors.

My eleventh case was a typical instance of Bell's paralysis. The patient, a girl 15 years of age, was at home, at the time that her little half-brother died of diphtheria. She had no sore throat, and any constitutional symptoms she might have had, were so slight that they attracted no notice. Shortly after the death of the half-brother I saw her, and found the left side of the face paralyzed. The examination of the urine yielded 4 per cent. of albumin. I would regard this as a case of diphtheria with some of the symptoms concealed.

The twelfth case of paralysis I mention is also one with diphtheritic associations. There were altogether five cases of diphtheria in the family. The eldest of these is the one given in this article as case five. Of the other two who died, one was a nursing child, and the membrane extended into the larynx; the other died of bronchitis due largely to measles in the house at the time, and which the patient had when she became diphtheritic. The two remaining ones with the diphtheria made good recoveries, and never exhibited after neural symptoms. One of the children, an active little boy, who had entirely escaped the diphtheria and measles, as was thought, shortly afterwards developed alarming paralysis, which kept him in bed for a little over a month. The four extremities were involved, both sensory and motor. There was no paralysis or anæsthesia of the palate or pharynx. The heart remained free; but the muscles of respiration were partially paralyzed.

I need not offer any comments on this case. It comes within the group described by Boissarie, as occurring at the time when diphtheria was prevalent, but in persons who did not have the disease, only suffering from some associated poison. My own opinion is that this boy had a genuine attack of the disease. Diseases do not breed true in all their clinical features. It is in this way that we can explain those cases of Boissarie where the paralysis came on first, and the sore throat later in the illness. The poison acted most promptly and intensely on the nervous system, causing paralysis at once, and as the only symptom in some cases; and sore throat later on in addition, in other cases.

My thirteenth case has some features about it that demand very careful consideration. A house in which I had four cases of diphtheria, namely: husband, wife, adopted daughter and wife's sister, was regarded as in an extremely unsanitary condition. The cellar was damp and musty, and contained a good deal of old earth and organic matter. The above persons moved away. This was in June. In the end of August another family moved into the house. No sanitary improvements had been made. On September 13 I was asked to visit the house, when I found the patient, female aged 11 years, suffering from symptoms of paralysis. The legs mainly were implicated. The knee-jerk was reduced. There were sensory as well as motor symptoms. No history whatever of sore throat or previous exposure to diphtheria. The child developed the paralysis rapidly on entering the premises where diphtheria had been known to exist. The explanation of this case might be the bad condition of the house, or that the diphtheria contagion still infected the place. They were ordered to leave the house at once. The patient gradually got well, but never exhibited any further symptoms of diphtheria. There was a small amount of albumin in the urine.

From the above cases I would conclude as follows:

1. That paralysis following acute contagious diseases is not due to some associated poison, as held by Boissarie.

2. That some of the cases of paralysis are due to the direct action of the specific poison of the disease.

3. That some cases of paralysis come on at a date when we can no longer believe that the specific poison of the disease is in activity. These cases may be due to: *a*, some poison or impurity left in the system; or to, *b*, some weakened and unstable state of the nervous tissue, caused by the disease, and which cold, wet or fatigue readily overthrows. In this way a paralysis results, as might have been the case, after such exposure, even though there had been no previous illness: but with greater readiness in those recently recovered from some acute attack, as typhoid fever or diphtheria.

THE second annual session of the Association of Military Surgeons of the National Guard of the United States will be held at St. Louis, April 19, 20, and 21, 1892. An interesting programme of addresses by prominent surgeons of the National Guard and the United States Army has been arranged, and a goodly number of scientific papers on Military and Accidental Surgery will be read and discussed, and all matters pertaining to the health, usefulness and welfare of the civilian soldiers will receive attention.

THE USE OF THE TURKISH BATH IN INEBRIETY.

Read before the American Association for the Study and Cure of Inebriety, New York, April 15, 1890

BY CHAS. H. SHEPARD, M.D.,

OF BROOKLYN, N. Y.

The etiology and philosophy of inebriety have been presented very thoroughly in previous papers read before this Association, and I am now accorded the privilege of bringing to your notice a new method of treatment for that condition.

It is with pleasure that we note many of the former theories held on this subject giving place to more modern ideas. Common opinion considered inebriety a vice, needing only moral treatment, while to-day it is demonstrated to be a disease, and the world is waiting to honor him who first discovers its microbe.

It was not until such ever-to-be-honored men as Dr. Turner, Dr. Parrish, Dr. Mason, and a few others, made plain to the community the true standing of the inebriate, and showed that this disease was one to be treated on the same general principles as other diseases, that a right appreciation of such cases was obtained. These men have passed on, but their work remains, and future generations will call them blessed.

Dr. J. Edward Turner's name heads the list of consecrated workers in this field, as he built the first inebriate asylum in this or any other country. The corner stone, after an unparalleled amount of work on his part, was laid in 1858, at Binghamton, N. Y., and the institution, which was opened for patients in 1863, was carried on under his administration for three years with great success. Many who were his patients then have since been useful and honored members of society. The history of that institution after he left it, shows how the most beneficent enterprise may be wrecked by bad management.

A prominent feature in Dr. Turner's plan of treatment made it necessary to isolate the patient from the possibility of obtaining alcohol in any form, and to continue this exclusion long enough to make a complete cure, the time varying in different cases according to the condition of the patient. It has been demonstrated over and over again, that unless entire exclusion can be obtained, the work of reform requires repetition. There are many reasons why an institution is essential for the care of inebriety as well as of disease in general. The appliances for treatment are more complete than can be possible in the individual home, the supervision of the physician is direct and constant, and therefore the attention is more prompt, the surroundings of the patient as to sanitation, diet, etc., can be better regulated, and the uniformity of life, as well as treatment, all conduce to a speedy recovery. When we have attained exclusion, the first step toward a radical cure is taken. Without this any institution purporting to treat such conditions is incompetent in many cases.

Next in order comes the restoration of the functions of the body to their normal working condition. It is understood that the action of alcohol, as well as the narcotics, retards the waste of tissue, and some have imagined this to be an advantage, but on the contrary the system, by the free use of these agents, is often loaded, as it were, to the brim, and then is ready to be discharged like a cannon at the touch of a match, and for this very reason they are more dangerous. Notice how many of those who make a free use of them are suddenly stricken down, while apparently in what should be the vigor of life.

The action of the so-called stimulants, as well as narcotics, is in reality, a toxic effect, mistakenly supposed to be stimulation, and, like other poisons,—the system refuses them, as they are non-assimilable, and therefore the easiest method, by what may be called vital reaction, is taken to get rid of them. When from excess or weakness this result cannot be accomplished, what may be called a benumbing effect is produced. The longer alcohol remain in the system, the more this effect will be perceived, and this being in the nature of paralysis, must naturally act in a progressive ratio, till the impairment of the functions of the organs is succeeded by an inability to work at all. How would it be possible to go on day after day bathing the internal organs with dilute alcohol without its inducing some kind of disease? The elimination from the body of this substance, with its irritating compounds, necessarily falls largely upon the kidneys and skin, and when these are overworked, disturbance quickly follows. Whenever elimination is suspended, insomuch is one or more of the organs engorged. This is particularly disastrous so far as the brain is concerned, for then proper coördination is interfered with and we see the gradual approach toward insanity or idiocy, the trembling nerves, and finally utter incompetency. By no means should the sufferer from such a disease be left to exercise his own judgment.

The more frequent practice is to introduce a drug into the stomach, in hopes that its action will be such as to correct the dominating morbid condition. Necessarily this drug or potion must be absorbed, pass into the circulation, and then produce its effect. Can an agent be found that will not cut both ways, like a two edged sword?

Of late much has been said and written about the chloride of gold treatment, and its wonderful success in the west. If an antidote has been found all will rejoice. But the laws of life and health must be strictly obeyed in spite of any so-called remedy, and we may rest assured that these laws are as inflexible to-day as is the law of gravitation. The time will never come when we may ignore any one of them without paying the penalty. It will ever be found necessary to pay strict attention to all the laws of sanitation, nor can we reach the highest standard of health till they are fully understood and obeyed. To go on in the way of transgression and then expect to be bailed out by some new remedy is likely to prove as futile in the future as it has been in the past.

Permit me to mention one agency that accomplishes many of the results that different drugs are given to produce, and this without the reactive effect of the drugs; an agency that never fails in time of need; that requires not to be administered by the stomach or in any unpleasant way; that is always ready, and always agreeable to the patient, and more than that, is always delightful, soothing, and quieting to the irritated nerves. That agency is,—the hot air or Turkish bath.

The moment the bather enters the heated chamber of this bath he is called upon in the gentlest manner to discharge through the skin the refuse of his system. The process of unloading goes on constantly, and the longer he remains in the heat, the more foul material is thrown out. The skin is made active, the blood is perfected in its circulation; at the same time the elements of disease are discarded. Thus when there is alcohol in the system, it can be distinctly noticed in the perspiration. It is apparent to the sense of smell when alcohol is used even in a limited degree, and much more so when it is freely used. As the blood is brought to the surface and purified, it goes back to every organ to do better work and perfect every function, by carrying new elements of repair and nutrition, by which all the activities of life are renewed, so that, unless the work of destruction has been carried on too long, repair is set up and a better condition of things organized. For instance, if the kidneys have been inflamed, the inflammatory and obstructive particles are withdrawn, the former irritation is quieted, there is less determination of blood and nervous energy to that part, through the general equalization, so that a normal action follows, and this vivifying process goes on, not alone with the kidneys, but with every organ of the body to which the vital fluid reaches. Then again, the manipulation which accompanies this treatment, renders more perfect every process, and in a large measure takes the place of exercise. Nothing could be more simple and perfect in its action. The effect is constitutional or general, and thus quickly overcomes all local obstructions, and the process needs only to be repeated and continued long enough to reach the most depraved cases.

By no means will this process restore a lost arm or a wasted lung, but many an arm that has been unfitted for service by inflammation, has been quickly restored to its full activity, and many a lung that was not doing half work, has been cleaned and restored to its normal action, and the brain that before was cloudy, has been cleared and restored to almost its pristine activity.

When we realize that the lesions of alcohol are more marked by functional diseases than by any anatomical change, it is quickly seen, how important is an agency that appeals so directly to these conditions. With health restored, the craving appetite for strong drink ceases, and a relish is felt for a purer and many times more agreeable exhilaration.

With so powerful an agency as this constantly at hand, we need little else. With simple, wholesome food, moderately indulged in, and with pleasant surroundings, all the health of which a person is capable is assured.

Cleanliness and politeness are among the necessary refinements of civilized society. The practice of the Turkish bath increases both. We can have no free intercourse among the people unless these characteristics belong to them, but with these secured we have the delights of social life, especially if with them we complete the trio, by adding sobriety.

Modern science has proven alcohol to be a poison, and holds it accountable for a large part of the disease and even insanity that curse our land. Look for one moment at the immense amount of time and treasure that is expended for stimulants alone; it is said to be sixty million pounds a year in Great Britain. Count Tolstoi makes the remarkable statement, that one-eigthth of the entire population of that country devote their lives to the manufacture of stupefying stimulants. Deliverance from this terrible custom that dominates so large a part of the world, will mark an epoch in the life of the race. Admitting that present relief is furnished to pain and anxiety by the use of stimulants, this at best is transient, and the price paid is too great. The coming physician will take higher ground, correct the patients' habits, read the signs of the nervous and mental constitution, as well as the heredity, and teach how to keep well, rather than to relieve mere temporary ills. Pain is one of our best friends, and may be compared to the watchman on the tower, warning us of the approach of the enemy. It would be the height of absurdity to shoot the watchman instead of heeding his warning.

The rush and push of the age, and the struggle for existence, are accountable for much of the use of stimulants, and for the failures in life and health that are continually before us. When one falls by the way, he thinks to recover himself by stimulation, rather than by rest and recreation, which would take time. He little realizes that the use of stimulants is only to draw on whatever vitality he may have left, that they never increase this force. Even medical men are sometimes deluded by the idea that they can tone up the patient and thus tide him over an emergency, losing sight of the fact that when the emergency is passed there is so much less vitality with which to react. Weakness can hardly be called a malady, though it may often be a symptom of a grave disease. The popularity of tonics and the importunity of patients will doubtless often tempt the practitioner, but he who regards the highest welfare of his patient will not thus be carried away, but rather inquire into the cause of the weakness, and show that by correcting the habits of the individual, the most fruitful source of weakness may be avoided.

There can be no immunity for the transgression of the laws of health. To study and obey them is incumbent on all alike. If the effect of transgressing these laws could easily be nullified by a tonic or stimulant, there would soon be no law.

A real tonic is food that can be appropriated to the purposes of the system, not that which is taken in excess, a burden to the organism, and therefore to be disposed of in the easiest manner possible. Another tonic is pure air, which furnishes oxygen to the skin and lungs, and thus vitalizes the circulation by burning up the débris and preparing the used up tissue to be cast off in the shape of watery vapor, carbonic acid gas, and salines.

The popular practice of using tonic drinks, as remedies to increase the appetite, is misleading, for it is not the amount of food that goes through the first stage of digestion that builds up the system, but rather that which is taken up and appropriated to the various uses of the body, an office that neither tonics, stimulants, nor narcotics are able in any manner to fill. Many a time has the health been utterly ruined by the false idea that in taking tonics the system was being nourished, perchance increasing in weight, while the disease itself was slowly but surely gaining ground. In all this use of stimulants, tonics and narcotics, it is the effect on the nervous system that is sought. There is too much willingness to live in the sensational and emotional, rather than to be subject to the will and common sense. The use of artificial tonic drinks is but little removed from that of alcoholic tipples.

Some time since, a course of experiments was entered upon to determine the value of various preparations of pepsin. These experiments included the addition of different drugs and mixtures of drugs under strict test conditions, and prove conclusively, that in every instance of such additions, the digestive process was retarded, and the delay was in proportion to the amount of the drug added. Those drugs which had the greatest tonic reputation, and of which iron was a component, produced the greatest delay of the digestive process.

It is only by nutrition that real vital force can be secured, and this must come through absorption into the circulating fluid of such portions of the food as are properly prepared for it. Motion calls for expenditure of vital energy in disposing of such products. Their use and disposal are the one grand necessity, and any thing that promotes this end is a real tonic.

Artificial heat is shown to fulfil this condition with less expenditure of vitality than any other agent. By inviting the circulation to the surface, it quickly disposes of all refuse and makes room for a new supply.

This effect is peculiarly happy in all cases of weakness, whether local or general, inasmuch as it is undergone in a passive state, and therefore calls for the minimum expenditure of vitality. This is why one feels so refreshed and rejuvenated after the Turkish bath. It is well known that whatever tends to build up and strengthen the muscular system, or invigorate the body generally, has at the same time a renewing and strengthening effect upon the whole nervous system, of which the brain is the head centre, and naturally receives the larger share of the benefit. This has been well shown in many cases of insanity, where the Turkish bath has wrought wonderful instances of relief.

Cases of acute inflammation and pain, attended with extreme debility, have enjoyed the bath twice daily for varying periods of between three and six months with the result of quickly relieving both pain and inflammation, and with a gradual improvement in health, strength and weight; some cases increasing between ten and twenty pounds while under the treatment.

When the inebriate can be kindly taken from society, of which he is unable to fulfil the duties, and be cared for till he is again fitted for its privileges; when the younger generation are taught the disastrous effects of the use of stimulants or narcotics in any form; and when the Turkish bath forms a necessary adjunct to every habitable institution, and is made generally accessible to the people, a brighter day for mankind will dawn upon the world.

A REPORT OF TWO CASES OF NEPHRECTOMY, SARCOMA AND PYONEPHROSIS.

Read before the Kings County Medical Association, December 8, 1891.

BY J. D. SULLIVAN, M.D.,
OF BROOKLYN, N. Y.

The two cases herein reported present many points of special interest, and it is hoped that their consideration will afford some additional knowledge relating to surgical diseases of the kidney.

Case I.—Miss K. D., aged 17 years, nativity New York, called at my office on April 7, 1890, to seek relief from pain in her back and right lumbar region, and a variety of symptoms pertaining to her nervous system. On careful inquiry, I elicited the following history: Father, brothers and sisters are in the enjoyment of good health. Mother died recently from kidney disease accompanied with dropsy. No other hereditary taint.

Patient has had irritable bladder since childhood. In February, 1889, she began to have pain in her back and right lumbar region, and frequent headaches. Soon after she began to have fainting spells, which would last from half an hour to two hours, with various nervous phenomena of a hysterical character. During the summer and fall of 1889 she was under the care, at different times,of two eminent neurologists, who evidently treated her for hysteria, although one of them expressed the opinion that there was some obscure morbid condition in the case. During the winter of 1889 and 1890, she applied to several other physicians for relief, but up to this time treatment of any kind had been of no avail, and she continued to grow worse in every respect.

She now complained of constant headache, pain in her back and right side, loss of appetite, with nausea and frequent attacks of vomiting. Micturition was painful and irregular, sometimes frequent, at other times at long intervals, even to only once in twenty-four hours. Her aunt, who accompanied her, stated that her sleep was very much disturbed, she was subject to frequent attacks of fever at irregular intervals, and that her nervous system had become very sensitive, and a moderate degree of excitement of any kind would bring on a fainting spell which continued for one or two hours at a time. These fainting spells were of almost daily occurrence.

The above symptoms embrace all the material points in the history of the patient. The urine was analyzed and found to contain considerable pus. Specific gravity was 1012. An examination of the bladder for stone or any abnormal growth proved negative. In the right lumbar region, and extending forward, I discovered a well marked fulness and hardness which was painful on pressure. My diagnosis was that we had a case of surgical kidney to deal with. Stating that the case would probably demand operation, I simply prescribed for the improvement of her general health, and determined to watch its progress for awhile, and if possible to learn something more definite in regard to its character. During the following week I saw her three times, and although she had many hysterical symptoms, I became fully satisfied that her sufferings were genuine, and that her condition was becoming more serious. Her pulse was soft, weak and varying, averaging about 120. Her temperature ranged from 99° to 102°. The quantity of urine varied from 12 to 30 ozs. in twenty-four hours, some days containing an ounce of pus, other days less than a drachm. Specific gravity ranged from 1008 to 1012. It was quite evident that her general health was rapidly failing, and the prognosis was decidedly grave. On April 14, Prof. J. D. Rushmore was called in consultation, and agreeing with my diagnosis, he advised an exploratory incision in the right lumbar region for the purpose of examining the diseased kidney, and the subsequent action to be determined by the character of the disease.

This was reluctantly consented to by the father and relatives, and two days later the patient was placed under the influence of ether, and the field of operation thoroughly cleansed. Dr. Rushmore made what is known as the "Czerny" incision; that is, an incision from just below the last rib, over the outer border of the quadratus lumborum, to a point just above the crest of the ilium, and supplemented by a transverse incision carried anteriorly. On reaching the kidney, this organ was found to be considerably enlarged and quite firm. A hypodermic needle was inserted into its substance, and after puncturing it in two or three places, pus was withdrawn into the syringe.

After careful deliberation, it was decided that nephrectomy was the proper course to pursue. The kidney having been well exposed, the ureter and renal vessels were ligated with strong silk ligatures, and the organ removed.

The hæmorrhage, which was but slight, was arrested by packing the wound with pads of cloth wrung out in hot water. A drainage tube was inserted, the wound closed with silk sutures, and the usual dressings applied.

The operation was well borne by the patient, and she rested well the following night. The next day her temperature was but a little above normal, and she appeared brighter and more comfortable than before the operation. The quantity of urine voided in the next twenty-four hours was 26 ozs., and contained but little pus.

The wound was healing nicely and all symptoms were favorable until the third day after the operation, when the daily secretion of urine diminished to 12 ozs., nausea and vomiting came on, and she complained of most distressing headache. On the fourth day diarrhœa supervened, and the irritability of her stomach became so great that all kinds of liquids were immediately rejected.

Her temperature ranged from 100° to 102°, and her pulse about 120 and feeble. Dr. Rushmore saw her again on the fifth day, and concurred with me in the opinion that her unfavorable symptoms were due to uræmia from incompetency of the remaining kidney. Various remedies were suggested and applied, but on the sixth day the uræmic symptoms were more marked, vomiting continued, and her bowels moved involuntarily. For hours at a time she would lie in a semi-comatose condition, with irregular twitchings of the muscles and limbs, and then awake and complain bitterly of the severe pain in her head and left side. I now determined to withdraw all kinds of food from the stomach, and endeavor to sustain her with nourishment applied to the skin. An emulsion of equal parts of cream and cod-liver oil was liberally rubbed all over the body and limbs every two or three hours, and a comfortable covering of flannel applied. One gr. doses of calomel were given morning and evening, with the hope of producing a beneficial effect on the kidney. Only small quantities of whey and barley water were given by the stomach. For three days she remained about in the same condition, and then began to show decided indications of improvement. The daily quantity of urine gradually increased, her intellect became brighter, the muscular twitchings ceased, and her stomach became more tolerant to fluids. Within the following week she was able to retain a fair supply of peptonized milk, and by the middle of May her digestion was fairly good, and the daily quantity of urine increased to 36 ozs. The nephrectomy wound apparently closed by primary union, and the sutures were removed on the fifth day, but during the second week, when her vitality was so low, the bond of union gradually broke down, and it was subsequently dressed openly with loose packing. As her general condition began to improve the wound began to granulate, and continued in a healthy condition until it was completely closed, June 1.

use of stimulants, this at best is transient, and the price paid is too great. The coming physician will take higher ground, correct the patients' habits, read *the signs of the nervous and mental constitution*, as well as the heredity, and teach how to keep well, rather than to relieve mere temporary ills. Pain is one of our best friends, and may be compared to the watchman on the tower, warning us of the approach of the enemy. It would be the height of absurdity to shoot the watchman instead of heeding his warning.

The rush and push of the age, and the struggle for existence, are accountable for much of the use of stimulants, and for the failures in life and health that are continually before us. When one falls by the way, he thinks to recover himself by stimulation, rather than by rest and recreation, which would take time. He little realizes that the use of stimulants is only to draw on whatever vitality he may have left, that they never increase this force. Even medical men are sometimes deluded by the idea that they can tone up the patient and thus tide him over an emergency, losing sight of the fact that when the emergency is passed there is so much less vitality with which to react. Weakness can hardly be called a malady, though it may often be a symptom of a grave disease. The popularity of tonics and the importunity of patients will doubtless often tempt the practitioner, but he who regards the highest welfare of his patient will not thus be carried away, but rather inquire into the cause of the weakness, and show that by correcting the habits of the individual, the most fruitful source of weakness may be avoided.

There can be no immunity for the transgression of the laws of health. To study and obey them is incumbent on all alike. If the effect of transgressing these laws could easily be nullified by a tonic or stimulant, there would soon be no law.

A real tonic is food that can be appropriated to the purposes of the system, not that which is taken in excess, a burden to the organism, and therefore to be disposed of in the easiest manner possible. Another tonic is pure air, which furnishes oxygen to the skin and lungs, and thus vitalizes the circulation by burning up the débris and preparing the used up tissue to be cast off in the shape of watery vapor, carbonic acid gas, and salines.

The popular practice of using tonic drinks, as remedies to increase the appetite, is misleading, for it *is not the amount of food that goes through the first* stage of digestion that builds up the system, but rather that which is taken up and appropriated to the various uses of the body, an office that neither tonics, stimulants, nor narcotics are able in any manner to fill. Many a time has the health been utterly ruined by the false idea that in taking tonics the system was being nourished, perchance increasing in weight, while the disease itself was slowly but surely gaining ground. In all this use of stimulants, tonics and narcotics, it is the effect on the nervous system that is sought. There is too much willingness to live in the sensational and emotional, rather than to be subject to the will and common sense. The use of artificial tonic drinks is but little removed from that of *alcoholic tipples*.

Some time since, a course of experiments was entered upon to determine the value of various preparations of pepsin. These experiments included the addition of different drugs and mixtures of drugs under strict test conditions, and prove conclusively, that in every instance of such additions, the digestive process was retarded, and the delay was in proportion to the amount of the drug added. Those drugs *which had the greatest tonic reputation*, and of which iron was a component, produced the greatest delay of the digestive process.

It is only by nutrition that real vital force can be secured, and this must come through absorption into the circulating fluid of such portions of the food as are properly prepared for it. Motion calls for expenditure of vital energy in disposing of such products. Their use and disposal are the one grand necessity, and any thing that promotes this end is a real tonic.

Artificial heat is shown to fulfil this condition with less expenditure of vitality than any other agent. By inviting the circulation to the surface, it quickly disposes of all refuse and makes room for a new supply.

This effect is peculiarly happy in all cases of weakness, whether local or general, inasmuch as it is undergone in a passive state, and therefore calls for the minimum expenditure of vitality. This is why one feels so refreshed and rejuvenated after the Turkish bath. It is well known that whatever tends to build up and strengthen the muscular system, or invigorate the body generally, has at the same time a renewing and strengthening effect upon the whole nervous system, of which the brain is the head centre, and naturally receives the larger share of the benefit. This has been well shown in many cases of insanity, where the Turkish bath has wrought wonderful instances of relief.

Cases of acute inflammation and pain, attended with extreme debility, have enjoyed the bath twice daily for varying periods of between three and six months with the result of quickly relieving both pain and inflammation, and with a gradual improvement in health, strength and weight; some cases increasing between ten and twenty pounds *while under the treatment*.

When the inebriate can be kindly taken from society, of which he is unable to fulfil the duties, and be cared for till he is again fitted for its privileges; when the younger generation are taught the disastrous effects of the use of stimulants or narcotics in any form; and when the Turkish bath forms a necessary adjunct to every habitable institution, and is made *generally accessible to the people*, a brighter day for mankind will dawn upon the world.

A REPORT OF TWO CASES OF NEPHRECTOMY, SARCOMA AND PYONEPHROSIS.

Read before the Kings County Medical Association, December 8, 1891.

BY J. D. SULLIVAN, M.D.,
OF BROOKLYN, N. Y.

The two cases herein reported present many points of special interest, and it is hoped that their consideration will afford some additional knowledge relating to surgical diseases of the kidney.

Case I.—Miss K. D., aged 17 years, nativity New York, called at my office on April 7, 1890, to seek relief from pain in her back and right lumbar region, and a variety of symptoms pertaining to her nervous system. On careful inquiry, I elicited the following history: Father, brothers and sisters are in the enjoyment of good health. Mother died recently from kidney disease accompanied with dropsy. No other hereditary taint.

Patient has had irritable bladder since childhood. In February, 1889, she began to have pain in her back and right lumbar region, and frequent headaches. Soon after she began to have fainting spells, which would last from half an hour to two hours, with various nervous phenomena of a hysterical character. During the summer and fall of 1889 she was under the care, at different times, of two eminent neurologists, who evidently treated her for hysteria, although one of them expressed the opinion that there was some obscure morbid condition in the case. During the winter of 1889 and 1890, she applied to several other physicians for relief, but up to this time treatment of any kind had been of no avail, and she continued to grow worse in every respect.

She now complained of constant headache, pain in her back and right side, loss of appetite, with nausea and frequent attacks of vomiting. Micturition was painful and irregular, sometimes frequent, at other times at long intervals, even to only once in twenty-four hours. Her aunt, who accompanied her, stated that her sleep was very much disturbed, she was subject to frequent attacks of fever at irregular intervals, and that her nervous system had become very sensitive, and a moderate degree of excitement of any kind would bring on a fainting spell which continued for one or two hours at a time. These fainting spells were of almost daily occurrence.

The above symptoms embrace all the material points in the history of the patient. The urine was analyzed and found to contain considerable pus. Specific gravity was 1012. An examination of the bladder for stone or any abnormal growth proved negative. In the right lumbar region, and extending forward, I discovered a well marked fulness and hardness which was painful on pressure. My diagnosis was that we had a case of surgical kidney to deal with. Stating that the case would probably demand operation, I simply prescribed for the improvement of her general health, and determined to watch its progress for awhile, and if possible to learn something more definite in regard to its character. During the following week I saw her three times, and although she had many hysterical symptoms, I became fully satisfied that her sufferings were genuine, and that her condition was becoming more serious. Her pulse was soft, weak and varying, averaging about 120. Her temperature ranged from 99° to 102°. The quantity of urine varied from 12 to 30 ozs. in twenty-four hours, some days containing an ounce of pus, other days less than a drachm. Specific gravity ranged from 1008 to 1012. It was quite evident that her general health was rapidly failing, and the prognosis was decidedly grave. On April 14, Prof. J. D. Rushmore was called in consultation, and agreeing with my diagnosis, he advised an exploratory incision in the right lumbar region for the purpose of examining the diseased kidney, and the subsequent action to be determined by the character of the disease.

This was reluctantly consented to by the father and relatives, and two days later the patient was placed under the influence of ether, and the field of operation thoroughly cleansed. Dr. Rushmore made what is known as the "Czerny" incision; that is, an incision from just below the last rib, over the outer border of the quadratus lumborum, to a point just above the crest of the ilium, and supplemented by a transverse incision carried anteriorly. On reaching the kidney, this organ was found to be considerably enlarged and quite firm. A hypodermic needle was inserted into its substance, and after puncturing it in two or three places, pus was withdrawn into the syringe.

After careful deliberation, it was decided that nephrectomy was the proper course to pursue. The kidney having been well exposed, the ureter and renal vessels were ligated with strong silk ligatures, and the organ removed.

The hæmorrhage, which was but slight, was arrested by packing the wound with pads of cloth wrung out in hot water. A drainage tube was inserted, the wound closed with silk sutures, and the usual dressings applied.

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Drs. E. A. Parker, James McEvitt, D. M. Downey, and D. P. O'Hanlon, the patient was etherized, and with the usual antiseptic precautions I made the "Czerny" lumbar incision and through it obtained a good view of the kidney. Fluctuation was easily detected on its convex border. In fact it was demonstrated that its cortical portion was only the posterior wall of a large sac formed by the distended pelvis. The kidney was firmly located in its normal position, but the enlarged pelvis extended behind the ascending colon nearly to the median line.

The sac was closely adherent to the colon and other surrounding structures. I then decided to extirpate the kidney without opening the sac. By careful dissection with the tips of my fingers and the handle of the scalpel and a very little cutting, I succeeded in separating the adhesions from the colon and peritoneum. The kidney was so firmly fixed in its position that portions of its capsule were left *in situ*. The ureter and renal vessels were ligated with silk ligatures and when they were severed I discovered that another set of renal vessels entering the upper portion of the pelvis still held the organ in position.

The second renal artery and vein were also ligated separately and the mass removed. The small amount of hæmorrhage was soon arrested by the application of pads of sterilized gauze wrung out of hot water. Two drainage tubes were inserted and the wound closed with silk ligatures and dressed with sterilized gauze. On being put to bed the patient was given an enema of one ounce of whisky with half an ounce of beef peptonoids, and for the next twelve hours received nothing but a teaspoonful of hot water every half hour, which was then increased to a tablespoonful at the same interval. During the second day his diet was restricted to whey, of which he drank, on an average, an ounce and one half every hour. For the next week he was allowed peptonized milk and Vichy water, and was then put upon a light general diet, excluding meats.

For several days before the operation his temperature varied from 99° to 102⅕°, on the first day after it was from 100° to 101°, on the second day from 99° to 100°, and on the third day came down to 98⅘°, and varied little from the normal point during the following month. On the first day after the operation he passed 24 ounces of urine, on the second 25 ounces, and for the next two weeks the daily quantity varied from 23 to 28 ounces, after which the quantity gradually increased to 48 ounces. It is now normal in every respect. The wound healed by primary union with the exception of the space occupied by the drainage tubes. Although these tubes were removed about the end of the first week, a sinus remained for several weeks which continued to discharge more or less pus, and showed no signs of healing. I presumed that the ligatures on the renal vessels had failed to become encysted and would come away by a process of ulceration. After waiting until the end of the second month I determined to enlarge the sinus and curette the bottom of the wound. On making the incision one of the ligatures was found about half way out in the sinus, and the others lay loosely in a pocket at its inner extremity. The curette was freely applied to the suppurating surface; the wound irrigated and packed with sterilized gauze saturated with balsam of Peru. Healthy granulations soon appeared and the wound healed rapidly from the bottom. With the exception of the trifling annoyance caused by these ligatures the patient did not have an unfavorable symptom from the day of the operation to the present date. The sallowness of the skin soon gave way to a healthy color, his appetite and digestion became remarkably good and his general health was restored.

I deem it a special privilege in this case to present for your inspection this evening the sound patient and the morbid specimen. The one an educated gentleman who has considerable practical knowledge of the vagaries of a floating kidney, and now fully appreciates the merits of modern surgery; the other of scientific interest as a pathological specimen of an anatomically abnormal organ. In regard to the points of special interest in this case we may inquire first: Did the second set of renal vessels which entered the upper portion of the pelvis have any etiological relation to the displacement of the kidney? I am inclined to answer in the affirmative, for in ligating these vessels I was obliged to pass the ligatures under the free border of the ribs toward the median line of the body, and it appears to me that they were not of sufficient length to reach to the normal position of the kidney.

Secondly. Was the peculiar position of the organ an embarrassing factor in the early diagnosis of the case? The history indicates that it was, for the patient was examined by many able physicians and surgeons before Prof. Weber, and they all failed to make a correct diagnosis. Thirdly. Was pyonephrosis caused by the operation of nephrorraphy or was it an indirect result of the fixation of the kidney? In other words, did the suppuration in the renal pelvis result directly from a septic germ introduced or developed by the operation, or was it indirectly produced by the fixed position of the ureter causing some obstruction to the exit of the urine and its consequent retention and irritation.

These are questions which I merely mention for your consideration, but am not prepared to discuss in this paper. If the suppuration was a direct result of the nephrorraphy, I am inclined to the opinion that such a conseqence would be less likely to follow if the wound were left open and allowed to heal by granulation, as recommended by some surgeons who have written on this subject.

The limits of this paper will permit me merely to allude to the points of special interest in Case 1.

The difficulties encountered in its early diagnosis, the concurrent development of hysteria, the supervention of uræmia after nephrectomy, and its brief duration, the malignant character of the disease and its non-recurrence within a period of twenty months, are facts of special significance. It is notable that in both these cases the right kidney was the organ affected, whereas the left kidney has the reputation of being more liable to disease.

CLEVELAND HAS AN EPIDEMIC OF IMPETIGO CONTAGIOSA.—It prevails all over the city, and in some quarters has caused some needless, albeit natural, alarm. It is a mild, self-limited, pustular affection of the skin, and attacks adults as well as children. It shows itself in the form of large, flat, superficial crusts, chiefly on the lower part of the face and hands, and to a less degree on the covered portions of the integument.—*Cleveland Med. Gaz.*

During the granulating process the ligatures, which had been placed on the renal vessels, came away.

About the middle of June she began to go out, and on July 1 she came to my office, apparently in the enjoyment of very good health. It is worthy of note that all through her convalescence she complained of pain in the region of the left kidney, which she described as being similar to that which she had in her right kidney a year before. This pain, however, was more severe within the first month after the operation, and gradually became less as time passed on and her condition improved.

She continued to have occasional attacks of hysteria, and it was during those attacks that she complained mostly of the pain. It is now one year and eight months since the nephrectomy was done, and up to the present time there has been no positive evidence of disease in the other kidney. The daily quantity of urine averages about 40 ozs., and it is normal in every respect. Through the kindness of Dr. J. M. Van Cott, Jr., Pathologist and Curator to the L. I. College Hospital, I am enabled to give the following results of the microscopical examination of the diseased kidney. Addressing Dr. Rushmore, he writes: "Careful examination of the kidney removed by you a few days since, reveals it to be the site of a well-marked, typical, small round and spindle cell sarcoma, which has invaded the greater portion of the entire organ. The upper part of this wedge-shaped mass is necrotic, a fairly large and deep ulcer being seen just over the centre of the growth. With regard to the prognosis in this case, it is to be remarked that, on general principles, small round and spindle-celled sarcoma belong to the most malignant of neoplasms, but it is equally certain that such a tumor, thoroughly encapsulated, will not display the tendency to recurrence it is sure to if not encapsulated. Now as the renal capsule appeared to be intact, I am of opinion that the chance of recurrence is much lessened, and unless recurrence is rapid, I believe you have saved your patient."

The history of the case thus far is in accordance with Dr. Van Cott's report, and prognosis.

Case 2.—Rev. J. D. R., aged 38 years, native of Holland. Mother, one brother and one sister died of consumption. Says that he must have had some congenital malformation in his right side, for during his early boyhood, his parents cautioned him to refrain from active sports, such as jumping, skating, swimming, etc., for they said he was in danger of having a rupture on that side. From 12 to 19 years of age he occasionally had attacks of pain in the right side of the abdomen, just below the free border of his ribs. At the age of 23 years, the attacks of pain became very severe. Several physicians in England and in different parts of the European Continent were consulted, but they differed in the diagnosis of the case. In July, 1876, he was, on the advice of one of his physicians, sent to Carlsbad for treatment of disease of the liver. After drinking large quantities of the mineral waters of that place, the attacks of pain came on more frequently and with greater severity, and were only relieved by pressure on the right side, followed by a free discharge of urine.

While in Carlsbad, he had the privilege of consulting Prof. Weber, Jr., a member of the faculty of the University of Leipsic. Prof. Weber pronounced his trouble to be due to a floating kidney, and advised him to discontinue the use of mineral waters and medicines, and simply endeavor to improve his general health and accumulate flesh. He followed this advice, and from 24 to 36 years of age he enjoyed good health, with the exception of occasional attacks of pain in his right side. He, however, had learned to control those attacks by lying on his abdomen and pressing some hard substance, such as a bottle or his closed fists, against a swelling which came on with the attacks.

After continuing the pressure in this position for about ten minutes the swelling and pain would subside with a desire to urinate. Each attack of this kind was followed by the passage of an unusually large quantity of urine which, however, was normal in every other respect.

In December, 1890, the attack became more frequent, more violent and of longer duration, and he began to feel a pain in the region of the left kidney.

This alarmed him more than any of his former experiences. About June 1st, of this year, he consulted an eminent surgeon of Philadelphia, who confirmed the diagnosis of floating kidney and advised him to have it anchored. The operation was done in one of the hospitals of that city on June 13th. The wound was closed and healed by primary union.

He was confined to his bed for a period of six weeks after the operation. When but a few days up he noticed a swelling in the right side of his abdomen and he passed some blood with his urine. The surgeons in charge considered the swelling due to impaction in the large intestine and purged him freely. He was advised to go to the sea-side for the purpose of improving his general health. About the middle of last August he went to Coney Island, whence he came under my care. I first saw him about August 20th, of this year, when I obtained the chief points in the foregoing history.

He then presented a sombre expression of countenance with a sallow and muddy skin, such as is generally caused by septic influences. His pulse was about 120 and weak. Temperature 101°. He stated that he had lost about thirty pounds of flesh since the operation in Philadelphia.

An examination of his abdomen revealed the presence of a well marked swelling on the right side, the limits of which could be easily defined and which occupied the space from the free border of the ribs to near the crest of the ilium and from the lumbar muscles nearly to the umbilicus. It was dull or flat on percussion, and on careful palpation fluctuation was quite perceptible. Two samples of his urine, taken at different times, were examined, one of which was quite normal, the other containing considerable pus. My diagnosis was that he had either a pyonephrosis or a pyo-hydronephrosis, and that the tumor was the distended pelvis of the kidney. I advised the introduction of an aspirating needle to determine its true character, but at that time he positively declined to allow any further surgical procedure. A few days later, however, he realized that there was no other hope of saving his life and he consented to enter St. Mary's Hospital, and put himself under my care. On August 25th, with the approval and coöperation of Dr. Geo. R. Fowler, I introduced through the loin a trocar and canula attached to an aspirator and drew off about a quart of pus. We then decided that either a nephrotomy or a nephrectomy was evidently demanded. On August 27th, assisted by the house-staff, Drs. E. A. Parker, James McEvitt, D. M. Downey, and D. P. O'Hanlon, the patient was etherized, and with the usual antiseptic precautions I made the "Czerny" lumbar incision and through it obtained a good view of the kidney. Fluctuation was easily detected on its convex border. In fact it was demonstrated that its cortical portion was only the posterior wall of a large sac formed by the distended pelvis. The kidney was firmly located in its normal position, but the enlarged pelvis extended behind the ascending colon nearly to the median line.

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I deem it a special privilege in this case to present for your inspection this evening the sound patient and the morbid specimen. The one an educated gentleman who has considerable practical knowledge of the vagaries of a floating kidney, and now fully appreciates the merits of modern surgery; the other of scientific interest as a pathological specimen of an anatomically abnormal organ. In regard to the points of special interest in this case we may inquire first: Did the second set of renal vessels which entered the upper portion of the pelvis have any etiological relation to the displacement of the kidney? I am inclined to answer in the affirmative, for in ligating these vessels I was obliged to pass the ligatures under the free border of the ribs toward the median line of the body, and it appears to me that they were not of sufficient length to reach to the normal position of the kidney.

Secondly. Was the peculiar position of the organ an embarrassing factor in the early diagnosis of the case? The history indicates that it was, for the patient was examined by many able physicians and surgeons before Prof. Weber, and they all failed to make a correct diagnosis. Thirdly. Was pyonephrosis caused by the operation of nephrorraphy or was it an indirect result of the fixation of the kidney? In other words, did the suppuration in the renal pelvis result directly from a septic germ introduced or developed by the operation, or was it indirectly produced by the fixed position of the ureter causing some obstruction to the exit of the urine and its consequent retention and irritation.

These are questions which I merely mention for your consideration, but am not prepared to discuss in this paper. If the suppuration was a direct result of the nephrorraphy, I am inclined to the opinion that such a conseqence would be less likely to follow if the wound were left open and allowed to heal by granulation, as recommended by some surgeons who have written on this subject.

The limits of this paper will permit me merely to allude to the points of special interest in Case 1.

The difficulties encountered in its early diagnosis, the concurrent development of hysteria, the supervention of uræmia after nephrectomy, and its brief duration, the malignant character of the disease and its non-recurrence within a period of twenty months, are facts of special significance. It is notable that in both these cases the right kidney was the organ affected, whereas the left kidney has the reputation of being more liable to disease.

CLEVELAND HAS AN EPIDEMIC OF IMPETIGO CONTAGIOSA.—It prevails all over the city, and in some quarters has caused some needless, albeit natural, alarm. It is a mild, self-limited, pustular affection of the skin, and attacks adults as well as children. It shows itself in the form of large, flat, superficial crusts, chiefly on the lower part of the face and hands, and to a less degree on the covered portions of the integument.—*Cleveland Med. Gaz.*

A CASE OF GASTROSTOMY FOR IMPERMEABLE STRICTURE OF THE CARDIAC END OF THE ŒSOPHAGUS. RECOVERY. SUBSEQUENT DILATATION OF THE STRICTURE, FOLLOWED BY RETROGRADE DILATATION.

BY ARCH DIXON, M.D.,
OF HENDERSON, KY.

On July 14 of the present year, Dr. Thos. W. Taylor consulted me in regard to a patient who was unable to swallow anything save liquid. The patient, Capt. S., aged 54, weight previous to difficulty in swallowing 230 lbs., at time of examination 156 lbs. Examination by means of œsophageal bougie (smallest size) revealed the fact that complete stenosis of the œsophagus existed at the cardiac end. Repeated trials failed to pass the stricture, and the patient was informed that only an operation, the nature of which was explained to him, could prevent his death from starvation. Operation was declined. Again on July 29, the patient consulted me, and after persistent effort I failed to pass the stricture with the smallest bougie. He was requested by me to go before the Henderson County Medical Society, which held a meeting that afternoon, and be examined. To this he consented, and again the attempt was made to pass the stricture by a number of physicians present, without success. A statement of his case was made by me, and the unanimous opinion was expressed to him that only an operation could save his life. He had by this time grown much weaker, and was reduced in flesh to 140 lbs. The operation was now consented to, and on August 4, at the Home Mission Sanitarium, assisted by Drs. John Young Brown, W. M. Hanna, W. S. Stone, A. J. Lieber and T. W. Taylor, I did a gastrostomy after Hacker's method, as follows:

The patient was prepared in the usual manner, the field of operation being made as nearly aseptic as possible. Chloroform was administered by Dr. T. W. Taylor. The incision was made 4 inches long, beginning 1 inch below the ensiform cartilage, and $1\frac{1}{2}$ inch to the left of the median line, the peritoneum was reached, caught up between forceps and divided the full length of the incision. The index and middle fingers were inserted, the transverse colon pushed downward and the stomach reached without difficulty, a fold of which was caught between the fingers and partially drawn through the wound, where it was held by Dr. Brown, while a careful search was made for the cardiac end, to detect, if possible, any tumor or enlargement which might be the cause of the stricture. None could be discovered. A silver pin was now passed through the fold of the stomach, which was drawn through the wound, a little above the level of the skin, care being taken that the pin pierced the mucous membrane, as suggested by Weir, thus forming a support for the stomach in the wound, and serving as a guide when the opening should be made into it, to show that the cavity was reached. The pin was about 3 inches long, and rested on the skin on either side of the wound. The peritoneal coat of the stomach was now stitched to the peritoneum by a continuous suture, which on either side included the skin. The peritoneum above and below was brought together by interrupted sutures, which embraced muscle, fascia and skin, as well. The wound was now covered with iodoform collodion, over which iodoform gauze was placed, confined by adhesive strips, the opening into the stomach being purposely deferred until adhesions should have formed. The patient recovered from the effects of the anæsthetic well. There was some pain of a darting character, which was relieved by hypodermic morphia $\frac{1}{4}$ gr., and atropia $\frac{1}{150}$. The operation was finished at 11 A.M. At 6 P.M. temp. was 99, pulse 78. August 5, temp. 98.5, pulse 72, temperature and pulse remaining normal until the morning of August 7, when the dressing was removed.

A few drops of cocaine were injected into the fold of the stomach which protruded through the wound, and the gastrostomy was completed by cutting down on the pin with a tentatome. As in Weir's case, the presence of the pin was a valuable guide in showing beyond question that the cavity of the stomach had been entered. There was no hæmorrhage of moment. The adhesions being firm, the pin was withdrawn, and the mucous membrane was drawn up and stitched to the skin. A rubber tube was now passed into the stomach through the opening, fitting it snugly. Iodoform collodion was liberally used around the tube and over the abdominal wound. Iodoform gauze folded several times, through which a hole was cut for the tube, came next, covered by a piece of rubber sheeting. Borated cotton, held in place by adhesive strips, completed the dressing. The tube was kept *in situ* by a thread passed through it above and below, and the thread held in place by adhesive strips. Peptonized milk $\frac{1}{2}$ pint, with a teaspoonful of Mosquera's beef-meal, was now injected through the tube into the stomach by means of a large syringe. An ordinary spring clothes pin was used as a clamp for the tube. Six hours later another $\frac{1}{2}$ pint of milk was thrown into the stomach, the patient experiencing a satisfaction which had not been experienced previously from the use of nutritive enemas. Temperature at 8 P.M. reached 101 degrees. At 10 A.M. August 8, it had again fallen to normal. The feeding was continued at intervals of six hours, the food being varied in character; chopped meat, eggs, bread, etc.,—the patient had an aversion to brandy, and would take no stimulant of any character. Improvement was steady, and in ten days the patient was out of bed, in two weeks he was walking about the house, and in three weeks he was down in the city, a distance of $\frac{1}{2}$ mile from the sanitarium. No difficulty was experienced in preventing leakage by means of the rubber tube, as long as the patient remained in bed, but when on his feet much annoyance was given by it. This was controlled by soft rubber bags with tubes extending out from about 10 to 12 inches; the bags were passed into the stomach in a collapsed condition, were then inflated and drawn up firmly against the opening, the dressing was applied and a hard rubber ball perforated sufficiently to allow the passage of the rubber tube was brought down closely on the top of the dressing and held there by a clamp. On the 29th day of August, 24 days after the primary operation, and 21 days after the stomach was opened, I determined to try dilatation and was agreably surprised to find that the smallest size, olive pointed bougie entered the stomach, passing the stricture without difficulty; a size larger was now used and it passed also, without force.

The following day a large stomach tube was passed down the œsophagus and with little difficulty entered the stomach. Dilatation was continued at intervals of a few days. From liquid food the patient soon essayed some solid and on September 10 took his first square meal, which consisted of oysters, broiled beef-steak, coffee, eggs and bread. The patient left the Sanitarium, and I was thinking seriously of closing the abdominal opening, or allowing it to close. On September 23, the patient, who made daily visits to my office, complained again of difficulty of swallowing solid food, especially was there difficulty in swallowing bread. The bougies passed the stricture easily, on entering, but on withdrawal there was a decided hitch, even the slightest bougie was caught when withdrawn. I at first attributed this to spasmodic action, but the difficulty grew greater and greater, until finally I could no longer enter the stomach by way of the œsophagus with a bougie. Liquids could still be swallowed and found their way into the stomach. I now determined to try retrograde dilatation and on September 30, assisted by Dr. John Young Brown, I succeeded in finding the cardiac end of the œsophagus and entering it with a very small bougie. a boulá. The opening was about the size of a very small size shirt button hole and felt much like the meatus urinarius in a girl; it was surrounded by a hard tissue, feeling much like fibroid. A uterine sound was now next properly bent and with the finger as a guide, passed into the œsophagus; this was followed by a uterine dilator; slight pressure on the handles opened the blades almost one-half an inch but the patient experienced so much pain that it was thought better to desist. The following day, chloroform was administered by Dr. W. S. Stone, and retrograde dilatation was accomplished, first by means of Gil Wilu's uterine dilator, the use of which enabled me to enter the orifice with a large size rectal bougie.

Up to this time I had not been able to determine whether the stricture was due to malignant trouble or not, but on passing the finger into the now dilated œsophagus, a friable irregular growth was detected, which easily broke down and bled rather freely. A piece of the growth was twisted off by forceps and was sent to Formad, in Philadelphia, for examination. Since the dilatation the patient has been able to swallow solid food without much difficulty and has notably improved in flesh and strength, and is able to attend to some business. Of course if I am right in the opinion that the trouble is malignant it is only a question of time as to how long the patient may live, but there can be no doubt of the fact that but for the operation he would have been dead and that by it his life has been indefinitely prolonged.

I wish to acknowledge my indebtedness to Dr. Robt. F. Weir, of New York, for many valuable suggestions, both in the performance of the operation and in the management of the case afterward, gleaned from his report of a similar case published in the *Medical Record* of July 25, 1891.

Henderson, Ky., Oct. 14, 1891.

The Contributions to the London Hospitals have been $350,000 less than usual during the past year. This is thought to be due partly to the charges of mismanagement, partly to the demands made on philanthropic people by General Booth.

The Plague is reported to have broken out in the Government of Kazan, in Russia, among the famine-stricken peasantry.

PNEUMONIC FEVER—ITS MORTALITY. WITH A CONSIDERATION OF SOME OF THE ELEMENTS OF PROGNOSIS.

Read before the Chicago Medical Society, December 7, 1891.

BY EDWARD F. WELLS, M.D.,
OF CHICAGO, ILL.

The death-rate of pneumonic fever varies, according to the statements of authors, from *nil* to 100 per cent. I have collected and tabulated the statistics of 223,730 cases of this disease, of which number 40,276 perished from the direct effects of the malady—a rate of 18.1 per cent. These cases have been drawn from every available source, from all parts of the world, and have been subjected to every imaginable mode of treatment. Numerous schools of medical philosophy, and eras of fashion in therapeutics, have also passed through the various stages of their existence during the period of time covered by this inquiry. Notwithstanding this, it will be noticed that the death-rate of all the larger collections of cases—with few exceptions—is nearly the same, although they were probably subjected to widely different, possibly diametrically opposite, methods of therapeusis. From this we may infer that treatment alone has exercised but little influence over the natural course of the malady, and that the results of this analysis fairly represent its normal fatality. In addition, we have an indirect mortality of about 1.3 per cent. from cases followed by dependent chronic ailments, which, added to that from the disease *per se*, raises the true mortality rate to about 19.4 per cent.

Before giving the table, we will pass in review the published opinions of a few authorities on this subject: Bennett[1] considers the mortality of uncomplicated cases, properly treated, as being practically *nil*, and this opinion is shared by Barthez,[2] Joly,[3] Palmer,[4] Paton,[5] Thomas[6] and others. Ziemssen[7] says that "according to his observation, primary croupous pneumonia in children almost always ends in recovery." Raven[8] says that it "ends satisfactorily in a large majority of instances—children scarcely ever die of it." Trousseau[9] says that "generally speaking, there is a tendency to spontaneous recovery," and similar words are used by Baginsky,[10] Flint,[11] Waters[12] and many others.[13] D'Espine,[14] Hartshorn,[15] Wood,[16] and numerous other writers,[17] consider the fatality as very light. Gerhard[18] and others[19] affirm that the death-rate in private practice should not exceed 2 or 3 per cent.

We hear much of the innocuity of simple pneumonic fever, and in the fatal cases, how frequently do we find death attributed to "complications." As a matter of fact, cases are continually finding their way in significantly large numbers to the post-mortem table, with no other lesions except those legitimately belonging to the disease, showing that the malady *is* dangerous.

Copland,[20] Drake,[21] Mann[22] and others[23] consider pneumonic fever a very fatal disease. Gross[24] says that it is one of the "most formidable maladies which the physician has to cope with, and forms one of the great sources of mortality." Loomis[25] says that "the mortality average from all the published reports to which he has had access, gives 20.1 per cent. of deaths. . . From such facts it must be admitted that a disease in which death occurs in one out of five cases, should be classed among the very fatal diseases." Drummond[25] looks "upon pneumonia as one of the most fatal of acute diseases."

Donaldson,[26] Hart,[27] Sturges[28] and others, think that the mortality has greatly decreased in recent years, whilst Hartshorn[29] and others[30] hold the opinion that it has greatly increased. The statistics presented in the following table will show that neither of these propositions are established by the facts in the case.

TABLE I.—SHOWING DEATH RATE OF PNEUMONIC FEVER.

OBSERVER AND REFERENCE.	Cases.	Deaths	Per Cent
Acerbi, Annot. di Med. Prac., Milano, 1819, p. 94	142	16	11.2
Antoniu, Inaug. Dissert., Bucharest, 1887	142	2	1.4
Armstrong, U. S. Marine Hosp. Rpts., 1886, p. 129	36	11	30.6
Baginsky, Pneumonie u. Pleuritis, Würzb., 1880	199	49	24.6
Bamberger, Wiener med. Wochenschr., 1857, Nr. 5	60	4	6.7
Bang, Ranking's Abst., No. 28, p. 92	54	2	4.0
Banks, U. S. Marine Hosp. Rpts., 1888, p. 226	3,011	496	16.0
Bartels, Ann. d. Charité, Bd. vii, S. 234	161	21	19.4
Barthez, Bull. de l'Acad. de méd., 1862, T. xxvii, p. 676	212	2	1.0
Basel Hospt., Berichte	922	213	23.1
Bauer, Berichte med. Klin. München, 1878	109	21	19.1
Baumgärtner, Lungenentzündung, Stuttg., 1850	30	3	10.0
Becquerel, Sur l'influence des emiss. du sang, Paris, 1838	28	23	82.0
Bell, Braithwaite's Retrospect, Jan., 1859, p. 71	36	0	0.0
Bell, Ranking's Abst., No. 28, p. 92	81	4	5.0
Bennett, Lancet, 1865, Vol. 1, p. 195	129	4	3.1
Berliner Charité, Annalen, 1876–7	567	116	19.8
Besnier, Quoted by Lépine, Pneumonie, Wien, 1883	2,109	759	36.0
Biermer, Quoted by Kocher, Pneumonie, Würzb., 1866	60	10	16.6
Bird, Bouchet's Dis. Chest., London, 1865, p. 320	20	0	0.0
Bleuler, Inaug. Dissert., Zürich, 1865	228	44	19.3
Borland, Boston City Hosp. Rpts., 1870	190	27	14.2
Bouillaud, Dic. de méd., Paris, 1835	173	21	12.1
Bouillaud, Quoted by Sturges, Pneumonia, p. 206	102	12	12.0
Brandes, Virchow's Archiv., Bd. xv, S. 210	142	30	21.1
Brenchley, Lancet, 1890, Vol. I, p. 1425	12	0	0.0
Briquet, Ranking's Abst., No. 28, p. 92	129	17	13.2
British Army, LaRoche, Pneumonia, Phila., 1851, p. 417	5,685	399	7.0
Burkard, Ranking's Abst., No. 28, p. 92	120	2	1.6
Caton, Lancet, 1884, Vol. II, pp. 135-137	129	39	30.0
Chatelain, Jour. de méd. de Brux., 1870	39	20	52.0
Chomel, Pneumonie, Leipzig, 1841, S. 305	383	60	15.7
Churton, Lancet, 1890, Vol. II, p. 133	127	19	15.0
Chvostek, Œsterr. Zeitschr. f. prak. Heilk., 1867, Nr. 26, S. 43	209	36	17.2
Cincinnati Bd. Health Rpts., 1873-74-75	260	50	19.2
Cincinnati Hosp. Rpts., 1874-75	124	41	33.0
Cohn, Ranking's Abst., No. 28, p. 92	57	21	42.0
Coleman, Inaug. Dissert., Würzb., 1886, S. 13	25	3	12.0
Colin, Études clin. de méd. mil., Paris, 1863	74	4	5.2
Collective Investigation Record, London, 1884, Vol. II	1,065	192	18.0
Colles, U. S. Naval Rpts., 1881, p. 414	517	116	22.4
Cook Co. Hosp., Rpt. first half 1890, p. 36	131	49	14.4
Couldrey, Lancet, 1888	10	1	10.0
Croce, Deutsches Arch. f. klin. Med., Bd. xxxviii, S. 554	610	98	16.0
Dalton, St. Louis Med. Rev., Mar. 30, 1889, p. 355	124	45	36.3
Davis, Cincin. Lancet and Clinic, July 5, 1890, p. 9	15	1	6.6
De Bordes, Nederl. Weekbl. voor Genes., Jan., 1855	90	19	21.0
Derpmann, Inaug. Dissert., Bonn, 1885, S. 19	655	117	17.9
Dessau, Jour. Am. Med. Assoc., Nov. 29, 1890, p. 791	45	0	0.0
Dietl, Wiener med. Wochenschr., 1852	750	69	9.1
Dietl, Ranking's Abst., No. 28, p. 92	1,130	122	11.0
Doubleday, N. Y. Med. Rec., Mar. 28, 1885, p. 343	252	112	44.4
Dutcher, Cin. Lancet and Obsv., Jan., 1861, p. 10	50	1	2.0
Edinburg Infirmary Rpts., 1839 and 1865	80	4	5.0
Emmerich, Arch. f. Hygien., 1884, Bd. ii, Heft. 1	161	46	28.6
Feldhausen, Inaug. Dissert., Göttingen, 1879, S. 15	56	7	12.5
Fenwick, Lancet, Jan. 31 and Feb. 7, 1891	990	233	23.5
Fieandt, Helsingfors Duodecim, 1889	106	3	2.8
Fisher, N. Y. Med. Rec., July 28, 1889, p. 94	26	1	4.0
Fismer, Deutsches Arch. f. k. Med., Bd. xi, 1873	145	13	9.0
Fleischmann, Quoted by Sturges, Op. cit., p. 329	239	14	5.8
Flint, N. Y. Med. Jour., Mar., 1875, p. 290	133	35	26.3
Folkmann, Inaug. Dissert., Erlangen, 1847, S. 39	125	26	20.8
Forget, Gaz. méd. de Strasb., 1860	32	7	2.0
Fox, Reynolds' Syst. Med., Phila., 1880, Vol. II, p. 204	55	8	14.5
[illegible] Pneumonie, Würzb., 1855	872	262	30.0
[illegible], Göttingen, 1886, S. 26	179	16	9.0
[illegible] Klinik, 1855	12	0	0.0
Funck, Inaug. Dissert., Griefswald, 1868	941	102	10.8
Gandini, Ranking's Abst., No. 28, p. 92	25	0	0.0
Gontile, Laennec's Dis. Chest, N. Y., 1830, p. 270	40	1	2.5
Gerhard, Am. Jour. Med. Sci., Vol. XIV, p. 328	41	1	2.5
German Army, Hermann [illegible] 1880	42,467	1,524	3.6
Green, N. Y. Med. Rec., [illegible]	23	1	4.4
Grisolle, Traité de la Pn[illegible]	748	183	24.4
Gualdi, Lancet, 1884, Vol. II, p. 27	39	2	5.1
Hartshorn, Med. News, April 7, 1888	11,175	1,117	10.0
Hegele, Kissel's Pneumonie, Eilenburg, 1852, S. 149	40	0	0.0
Helbing, Canstatt's Jahresb., 1850	62	5	8.0
Hellis, Clin. méd., Paris, 1824	831	173	22.0
Herard, L'Union méd., 1847, No. 127	40	8	20.0
[illegible]	712	45	6.5
[illegible]	80	3	3.7
[illegible]	198	37	19.0
Homburger, Inaug. Dissert., Strassb., 1879, S. 71-72	25	9	36.0
Hourmann et Dechambre, Arch. gén. de méd., 1836	109	76	70.0
Hulava, Deutsch med. Zeitung, 1855	12	0	0.0
[illegible] Leipzig, 1861, S. 94	2,710	375	13.9
[illegible] March, 1875, p. 290	51	8	15.0
[illegible] oc., Aug. 7, 1886, p. 144	238	16	6.5
Judrin, Thèse de Paris, 1824, p. 17	30	1	3.3
Juergensen, Croup, Pneumonie, u. s. w., Tüb.	567	73	12.7
Kiemann, Präger Vierteljahrschr., 1867, Bd. xcix.	40	5	12.5
Kierchensteiner, Aerztl. Intelligenzb., 1880	160	46	28.7
Kissel, Canstatt's Jahresb., 1852	112	5	4.5
Kissel, *Pneumonie, Eilenberg, 1852, S. 288-91*	301	19	6.3
Kocher, Pneumonie, u. s. w., Würzb., 1866	60	5	8.3
Kreider, N. Y. Med. Rec., Sept. 7, 1889, p. 260	6	2	33.3
Krügerhausen, Praktische Fragmenten, Coblenz, 1845	71	1	1.4
Kühn, Berliner k. Wochenschr., 1879, No. 37	58	8	13.8
Lacage, Ranking's Abst., No. 28, p. 92	42	1	2.5
Laennec, Diseases of the Chest, N. Y., 1830	91	18	19.1
Laennec (A.), Jour. soc. méd. la Loire, 1825	40	6	15.0
Laveran, Mal. des armeés, Paris, 1875, p. 28	235	46	19.5
Leszinsky, quoted by Ziemssen, Pneumonie, 1862, S. 236	245	25	10.0
Leudet, Bull. gén. de thérap., 1863	40	3	7.5
Loomis, N. Y. Med. Gaz., April 30, 1881, p. 154	255	87	34.0
Louis, Rech. sur la effets de la saigneé, Paris, 1835	78	28	32.2
Louis, on Phthisis, Boston, 1840, p. 440	75	18	24.0
MacGregor, Med. Notes on the Crimean War	4,027	287	7.0
Markham, Gulstonian Lectures, London, 1866	392	56	14.3
Mason, Conn. Bd. Health Rpt., 1885, p. 338	50	23	46.0
McManus, N. Y. Med. Rec., Sept. 8, 1888, p. 260	62	2	3.3
Mercier, Bull. de la soc. l'Anat., T. xii, p. 279	70	29	40.1
Mitchell, Edinb. Med. and Surg. Jour., Nov., 1857	5,909	1,441	24.4
Mitchell, Ibid., p. 401	210	40	16.6
Montreal Gen. Hosp., Osler, Univ. Med. Mag., Nov., 1888	1,012	207	20.4
Morehead, Ranking's Abst., No. 28, p. 92	164	43	26.7
Morris, London Lancet, N. Y., 1881, Vol. I, p. 519	35	11	31.4
Müller, Ranking's Abst., No. 28, p. 92	10	0	0.0
Neumann, *Berliner k. Wochenschr., 1888*, S. 119	7	2	28.6
New Orleans Hosp., Osler, Op. cit	3,969	1,508	38.0
Oppolzer, Ranking's Abst., No. 28, p. 92	32	5	15.6
Osler, Edinb. Inf. cases, Op. cit	1,716	306	17.8
Paton, Am. Jour. Med. Sci., Oct., 1870, p. 375	96	2	2.2
Patton, Jour. Am. Med. Assoc., Oct. 16, 1886	63	36	57.1
Pause, Lungenentzündung, Leipzig, 1861, S. 154	169	26	15.3
Peacock, St. Thomas' Hosp. Rpts., Vol. V, p. 18	100	12	12.0
Peaslee, Chicago Med. Standard, Oct., 1889, p. 126	29	3	10.0
Pelletan, Mém. de l'Acad. de méd., T. VIII, p. 373	75	11	14.6
Pendleburry Hosp. Repts., Manchester, 1881–86	234	3	1.3
Penna. Hosp., Osler, Op. cit	704	205	29.1
Pepper, Bost. Med. and Surg. Jour., April 24, 1890	1,485	173	11.6
Piorry, Ranking's Abst., No. 28, p. 92	30	2	6.6
Pr. Edward's Is., 1889, N. Y. Med. Rec., July 13, '89, p. 44	546	40	7.3
Prus, Mém. de l'Acad. de méd., 1840, T. VIII, p. 13	129	77	59.0
Rall, Inaug. Dissert., Stuttg., 1887, S. 5	35	7	20.0
Rasori, Arch. gén. de méd., 1824	832	173	22.0
Reuf, Ranking's Abst., No. 28, p. 93	91	5	5.0
Reyburn, Am. Jour. Med. Sci., April, 1866, p. 368	202	14	6.9
Rietz, Inaug. Dissert., Jena., 1868, S. 19	392	50	12.8
Rilliet et Barthez, Mal. des enfants, Paris, 1838	81	77	95.0
Robinson, London Lancet, N. Y., 1852, Vol. II, p. 288	32	0	0.0
Rodman, N. Y. Med. Rec., 1875, No. 227	98	6	5.9
Rodman, Am. Jour. Med. Sci., Jan., 1876	98	25	25.0
Roth, *Statistik d. Pneumonie, Würzb., 1860*	237	45	18.9
Routh, London Lancet, N. Y., 1855, Vol. II, p. 36	193	9	4.5
Salawa, Schmidt's Jahrb., 1855, Bd. LXXXVI, S. 30	15	0	0.0
Salem Hosp. Repts., 1877, p. 8	2	1	50.0
Sampson, London Lancet, N. Y., 1851, Vol. II, p. 36	909	209	23.0
Samter, Inaug. Dissert., Breslau, 1881	331	39	11.0
Schapira, Inaug. Dissert., Würzb., 1877	258	36	14.0
Scheef, Inaug. Dissert., Tübingen, 1882, S. 15	547	72	13.1
[illegible] t., Berlin, 1873, S. 23, 24	333	51	15.3
[illegible] No. 28, p. 92	152	20	13.0
[illegible] Jour., Bd. III, S. 441	68	2	3.0
Schroeder, Inaug. Dissert., Kiel, 1882	1,277	183	14.8
Schultz, Jour. Am. Med. Assoc., July 30, 1886	238	16	6.5
Scotter, Lancet, 1890, Vol. II, p. 1170	29	18	62.1
Sigmund, Ranking's Abst., No. 28, p. 92	743	104	14.0
Skoda, Allgem. Weiner med. Zeitung, 1863	555	74	13.3
Smith, Schmidt's Jahrb., Bd. CXXXII, S. 321	103	3	2.7
Speck, Inaug. Dissert., Marb., 1870, S. 2	50	12	24.4
Stecher, Inaug. Dissert., Leipzig, 1866, S. 14	656	128	19.5
Steffan, Klinik d. Kinderk., Berlin, 1865	94	13	13.8
Steinmetz, Ohio Med. Recorder, June, 1877, p. 34	83	21	29.0
Stephan, Neder. Weekblad, 1888	25	9	36.0
Stortz, Inaug. Dissert., Würzb., 1884	1,432	258	18.5
Stevens, Am. Jour. Med. Sci., Oct., 1870, p. 376	78	5	6.5
Stierlin, Berliner k. Wochenschr., 1870, No. 26	150	7	4.6
Stiertin, Ranking's Abst., No. 28, p. 92	150	7	4.6
St. Mary's Hosp., Quincy, Rept., 1876	4	1	25.0
St. Michael's Hosp., Newark, Rept., 1876	29	4	13.0
Stoahml, Ranking's Abst., No. 28, p. 92	30	0	0.0
[illegible] uss, Op. cit., S. 86	670	49	7.3
[illegible] March 16, 1889, p. 291	20	1	5.0
[illegible] ndon, 1876	452	35	7.7
[illegible] 1855	6	0	0.0
[illegible] Abst., No. 28, p. 92	110	12	11.0
Thomas, Am. Jour. Med. Sci., Oct., 1870, p. 376	106	3	3.0
Thomas, Arch. d. Heilk., Bd. IV, Heft. 2	65	14	21.5
Thomas, Richmond and Louisville Med. Jour., 1876	68	1	1.9
Tommasini, Delle Peripneumonie, Bologne, 1817	115	14	12.1
Townsend, Jour. Am. Med. Assoc., Dec. 1, 1888, p. 789.	42	2	5.0
Townsend and Coolidge, Med. News, July, 1889	1,000	250	25.0
Tregagno Epidemic, Deutsch med. Zeit., 1883, Nr. 41	100	30	30.0
Trousseau, Ranking's Abst., Nr. 28, p. 92	52	2	4.0
U. S. Army, 1840–59, Hartshorn, Op. cit.	2,073	224	10.8
U. S. Army, Rebellion, Med. Hist., Vol. I, Pt. 1	77,335	20,116	26.1
U. S. Army, 1870–74, Circular No. 8	791	110	14.0
U. S. Army, 1888, Rept., p. 88	99	26	26.0
U. S. Marine Hosp. Service, 15 years, Repts.	3,511	598	17.0
U. S. Naval Repts., 1879–81–82–88	171	11	6.4
Valleix et Vernois, Quoted by Buchut, Dis. Chil., p. 325	128	127	99.2
Varrentrap, Henle's u. Pfeiffer's Zeitschr., 1851	23	1	4.0
Vienna Gen. Hosp., Ranking's Abst., No. 28, p. 92	6,798	1,966	29.0
Vienna Gen. Hosp., Juergensen, Ziemssen's Handb	7,942	1,946	24.7
Voght, Bull. gén. de thérap., Jan., 1860	56	4	7.0
Vogt, Quoted by Kocher, Op. cit., S. 28	51	4	7.8
Wagner, Contrastimulus, u. s. w., Berlin, 1819	13	7	53.8

Observer and Reference.	Cases.	Deaths	Per Cent
Waller, Inaug. Dissert., Erlangen, 1877, S. 25	81	9	11.1
Wassider, Ranking's Abst., No. 28, p. 92	112	4	3.5
Waters, Liverpool and Manchester Repts., Vol. IV	59	2	3.4
Waters, Diseases of the Lungs, p. 87	41	1	2.4
Witherspoon, Am. Jour. Med. Sci., Oct., 1870, p. 376	72	2	3.0
Witte, Inaug. Dissert., Berlin, 1877, S. 41	505	25	5.0
Wittich, Ranking's Abst., No. 28, p. 92	23	0	0.0
Woman's Hosp., Phila., Rept., 1876, p. 12	1	0	0.0
Woodson, Am. Prac., Mar., 1870, p. 289	20	2	10.0
Woodward, U. S. Marine Hosp. Repts., 1890, p. 155	13	2	15.0
Wucherer, Ranking's Abst., No. 28, p. 92	90	1	1.1
Wunderlich, Arch. f. p. Heilk., Bd. III, 1856	237	25	10.5
Wunderlich, Inaug. Dissert., Tüb., 1858, S. 31	50	8	16.0
Zeigeli, Satterthwaite, Med. News, Jan. 5, 1889	10	0	0.0
Author	198	81	16.1
Totals and average [31]	223,730	40,276	18.1

Several fallacies are liable to creep into a table of this kind. One of these is the fact that some observers count, whilst others do not, those cases of pneumonic inflammation occurring in the course of other grave disorders, *e. g.*, diabetes, chronic nephritis, cerebral disease, cancer, typhoid fever, etc. It is clear that if such cases are included in the calculation, the death-rate will be higher than when primary cases are alone considered. Again, many observers report a series of cases to illustrate the advantages of some favorite method of treatment. In this instance the reporter is prejudiced, and is prone to omit[32] from his list as many of the cases as can possibly be eliminated, in order that his percentage of cures may be raised.

There are certain antecedent and surrounding circumstances which influence favorably, or the reverse, the termination of the disease; *e.g.*, age, sex, constitution, temperament, idiosyncrasies, previous health, habits, etc., of the patient, and these must all be considered in forming a prognostic opinion.

Age exercises a remarkable influence over the fatality of pneumonic fever. Patients between the ages of 10 and 40 years withstand the malady better than do those older or younger, and the nearer we approach the extremes of life, the greater the mortality.[33] The death-rate in patients over 60 years of age is, according to some careful observers, as high as 80 per cent., and in the very young it is nearly as great. In the case of infantile pneumonic fever, there is a difference of opinion as to its fatality.

Thus, Trousseau[34] is said to have never lost a genuine case in a child. Sturges[35] says that "the old are likely to die, the young to recover." D'Espine[36] says that the danger in infants is very slight. Ziemssen[37] lost only 7 of 201—3.3 per cent.—infantile cases. Juergensen[38] lost 4 of 171 cases in children under 10 years of age—a death-rate of only 2.3 per cent. Baginsky[39] considered the danger slight. Vogel[40] says that in very young children the death-rate is considerable, but "children over 2 years of age bear lobar pneumonia as well as adults." Steffen[41] reports a mortality of 13.8 per cent. in children, and Funck[42] places it at 10.3 per cent. Barthez[43] had but 2 deaths in 212 cases between the ages of 2 and 15 years—a mortality of 1.9 per cent. Gerhard[44] lost only one of 40 patients ranging in age from 6 to 16 years. Lebert[45] regards the danger very slight in patients aged from 5 to 30 years. Fox[46] says that "childhood is a *doubtful cause of death.*" Stortz[47] and Schroeder[48] say that the danger is less in children than in adults, and this opinion is shared by Schapira,[49] Franque[50] and others.[51] My own infantile cases have died in less numbers than in the case of adults.

The percentage of deaths at various ages[52] is shown in the following table:

TABLE II.—SHOWING DEATH RATE OF PNEUMONIC FEVER AT VARIOUS AGES—PER CENT.

Authority.	—10	10–20	20–30	30–40	40–50	50–60	60–70	70+
Bamberger[53]	. .	1.0	3.2	5.2	7.0	35.0	40.0	50.0
Biach[54]	. .	9.4	13.3	23.3	31.6	37.8	54.0	56.6
Chomel[55]	. .	. .	13.6	18.0	33.3	40.0	63.0	. .
Derpmann[56]	26.3	49.2	48.9	38.9	48.1	40.6	11.5	21.2
Doubleday[57]	. .	21.5	33.3	53.3	70.7	66.6	56.2	50.0
Franque[58]	. .	3.1	10.9	23.5	33.3	76.9	. .	. .
Huss[59]	11.1	7.8	7.9	15.1	23.7	26.9	38.9	60.0
Juergensen[60]	3.0	. .	4.0	6.0	10.0	12.0	16.0	11.0
Klinger[61]	43.4	2.2	4.3	5.0	7.3	12.2	17.8	10.7
Lépine[62]	. .	. .	11.0	20.0	25.0	30.0	30.0	80.0
Pause[63]	26.5	. .	. .	17.2	10.5	11.1	35.7	38.4
Roth[64]	. .	1.0	7.6	20.9	26.7	32.3	26.7	60.0
Schapira[65]	. .	1.4	2.8	11.4	21.7	24.0	50.0	75.0
Stechert[66]	46.1	6.8	7.2	21.1	40.7	52.0	66.6	66.6
Stortz[67]	. .	2.4	6.0	10.5	26.8	33.3	50.0	50.0
Swett[68]	. .	. .	24.4	14.3	16.6	20.0	25.0	. .
Townsend and Coolidge[69]	10.0	10.6	18.5	25.3	29.2	55.0	46.9	66.7
Author[70]	8.0	3.1	7.0	9.4	13.0	24.0	37.0	53.0

Soldiers, on account of their age and surroundings, and from coming early under careful treatment and nursing, present but a light death-rate.[71]

In the German army during the years of peace—

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[1] Restorative Treatment of Pneumonia, p. 45.

[2] See Cincinnati Lancet and Observer, November, 1862, p. 668.

[3] Rev. med. de Toulouse, July, 1879.

[4] Physician and Surgeon, April, 1876, p. 161.

[5] Am. Jour. Med. Sci., October, 1870, p. 375.

[6] Richmond and Louisville Med. Jour., April, 1876.

[7] Pleuritis u. Pneumonie, Berlin, 1862, S. 256.

[8] London Practitioner, Vol. xxxi, p. 39.

[9] Clinical Medicine, Phila., 1873, Vol. i, p. 663.

[10] Pneumonie u. Pleuritis, Würzb., 1880, S. 3 und 66.

[11] N. Y. Med. Record, July 14, 1877.

[12] Contributions to Clinical and Practical Medicine, London, 1887.

[13] See Barnett, Jour. Am. Med. Assoc., December 11, 1886, p. 656: Morrow, Prac. Med., Columbus, 1853, p. 706; Rindfleisch, Path. Histol., Phila., 1872, p. 391; et al.

[14] N. Y. Med. Record, September 17, 1887, p. 375.

[15] Medical News, April 7, 1888.

[16] Prac. Medicine, Phila., 1847, Vol. xi, p. 41.

[17] See Chaumier, *Gaz. des Hôp.*, 1884; Cobleigh, Phila. Med. World, April, 1885, p. 132; Donaldson, N. Y. Med. Jour., March 7, 1885, p. 267; Grimshaw, Dublin Jour. Med. Sci., May, 1875; Holt, N. Y. Med. Record, February 14, 1885, p. 174; Legendre, Arch. gen. de med., 1859. Rodman, N. Y. Med. Record, 1875; Stratton, Med. Brief, May, 1886, p. 205; Whittaker, Cin. Clinic, June 16, 1877; et al.

[18] Am. Jour. Med. Sci., Vol. xiv, p 328

[19] Smith, Guy's Hosp. Rep., Vol. xliv, p. 59; et al.

[20] Med. Dic., N. Y., 1855, Vol. xi, p. 892.

[21] Dis. Int. Valley N. A., Phila., 1854, p. 853.

[22] Medical Sketches, Dedham, 1815.

[23] See Andral, Path. Med., Paris, 1836, T. 1, p. 386; Cowan, Trans. Tenn. State Med. Soc., 1891, p. 195; Gairdner, Lancet, 1887, Vol. ii, p. 247. Golynz, Trudi Russk. Obsh. ochran. narod-zdravija, St. Petersb., 1890, vi, p. 140: Loubimoff, Protokol. Zasaid. Kavkazsk. med. Obsh., Tiflis, 1889-90, xxvi, p. 444; Patten, Therap. Gaz., April, 1885, p. 234: Robb, Jour. Am. Med. Assoc., November 28, 1885, p. 614; Routh, London Lancet, N. Y., 1855, Vol. ii, p. 145; Steinmetz, Ohio Med. Record, June, 1877, p. 34; Woodson, Trans. Tenn. State Med. Soc., 1891, p. 193; et al.

[24] Med. News, June 9, 1883, p. 646.

[25] Pepper's Syst. Med., Phila., 1885, Vol. iii.

[25] Lancet, 1891, Vol. i, p. 647.

[26] Op. cit., p. 267.

[27] Jour. Am. Med Assoc., October, 1885.

[28] Natural History of Pneumonia, London, 1876, p. 203.

[29] Op. cit.

[30] Smith, N. Y. Med. Rec., October 20, 1888, p. 469. Woodson, op. cit., p. 193; et al.

[31] No attempt has been made to render this table complete.

[32] See also Gairdner, Dublin Med. Press, February 28, 1855

[33] See also Aitken, Sci. and Prac. Med., Vol. ii, p. 74; Bamberger, Wiener Med. Wochenschr., 1857, Nr. 50 u. 51; Biach, Med. Jahrb., Wien., 1879: Chomel, Pneumonie, Leipzig, 1841, S. 394; D'Espine, Ann. d'hyg. et de med., 1840, T. xxiii, p. 50; Doubleday, N. Y. Med. Rec., March 28, 1885, p. 343: Forscheimer, Cincinnati Lan. and Clinic, January 28, 1882: Fox, Op. cit., p. 205: Franque, Statistik d. Pneumonie, Würzb., 1855; Grisolle, Traite de la pneumonie, Paris, 1864; Hourmann et Dechambre, Arch. gen. de med., T. xii, p. 28, Huss, Op. cit., S. 94; Juergensen, Ziemssen's Handb., Bd. v: Lebert, Berliner k. Wochenschr., September 4, 1871; Lees, Lancet, 1889, Vol. ii, p. 890; Lepine, Pneumonie, Wien., 1883, S. 159; Loomis, Pepper's Syst. Med., Phila., 1885, Vol. iii, p. 195; Niemeyer, Prac. Med., Vol. i, p. 183; Porter, St. Louis Med. Press, March 30, 1889, p. 340; Rilliet et Barthez, Mal de l'enf., Paris, 1838; Robb, Op. cit., p. 614; Routh, Op. cit., p. 145; Schapira, Inaug. Dissert., Würzb., 1877; Schroeder, Inaug. Dissert., Kiel., 1882: Smith, Guy's Hosp. Repts., Vol. xliv, p. 59: Speck, Inaug. Dissert., Marb., 1870, S. 4; Sturges, Op. cit., p. 203; Swett, Dis. Chest, N. Y., 1856, p. 86; Ziemssen, Op. cit.; et al. Schuyler, N. Y. Med. Jour., May 14, 1887, p. 543, *says that "age in itself is not a cause of death in acute lobar* pneumonia."

[34] Med. Klin., übersetz, von Cülmann, Bd. 11, S. 410.

[35] Op. cit., p. 203.

[36] Trans. Intern. Med. Cong., Washington, 1887.

[37] Pleuritis u. Pneumonie, Berlin, 1862, S. 256.

[38] Ziemssen's Handb. d. Spec. Path. u. Therap., Bd. v, 1877, S. 158.

[39] Pneumonie u. Pleuritis, Würzb., 1880, S. 66.

[40] Diseases of Children, Am. Ed., p. 294.

1868 to 1878, excepting the years 1870–71—there were 42,476 cases of pneumonic fever, with 1,524 deaths, a rate of only 3.6 per cent. During the twenty-six years from 1854 to 1879, there were at the Germersheim garrison 396 cases of this disease, 24 proving fatal, a rate of 6.6 per cent. In the Stockholm military hospital during the four years 1842–45, there were 670 cases of this malady, with 49 deaths, a rate of 7.3 per cent.[72]

Pneumonic fever is much more fatal in ordinary hospital than in private practice.[73] This is due, in a measure, to the fact that such cases usually come late under treatment, and the patients are of a class which bears up illy under severe illness. The jolting to which they are often subjected, in being transported to the hospital, is also very injurious.[74]

Pneumonic fever is more dangerous in the female than in the male,[75] and this in the face of the fact that the normal death-rate for males is slightly in excess of that for females in diseases of all kinds.[76]

Franque[77] found the death-rate in 1,796 cases of pneumonic fever, 17 per cent. for males and 23 per cent. for females. Lebert[78] found the rate 16 and 21.8 per cent. respectively. In the Munich General Hospital the rate is 16.6 and 23 per cent. respectively.[79] In the three large hospitals of Vienna, the death-rate in 8,247 male cases was 20.7 per cent., and in 3,195 female cases 30 per cent.[80] Bamberger[81] found the rate in males 8.7, and in females 16.6 per cent. Roth[82] found it 16.2 and 23.6 per cent. respectively.[83]

TABLE III.—SHOWING COMPARATIVE MORTALITY OF PNEUMONIC FEVER BY SEXES.

OBSERVER.	MALES. Cases.	Deaths.	%	FEMALES. Cases.	Deaths.	%	TOTAL. Cases.	Deaths.	%
Berlin Charite[84]	453	90	20.0	114	26	23.0	567	116	20.5
Biach[85]	8,247	1,707	20.7	3,195	959	30.0	11,412	2,666	21.2
Chomel[86]	313	38	12.5	70	22	32.0	383	60	15.6
Dietl[87]	364	28	6.7	297	41	12.1	661	69	10.4
Huss[88]	2,259	291	12.9	451	84	18.6	2,710	375	13.8
Huss,[89] Vienna Cases . .	3,981	831	20.9	2,009	610	30.1	5,990	1,441	21.5
Juergensen[90]	5,467	1,149	21.0	2,475	795	31.1	7,942	1,944	21.9
Louis[91]	52	15	29.0	23	3	13.3	75	18	21.0
Munich Hospt[92]	794	132	16.6	352	81	23.0	1,146	213	18.5
Pause[93]	86	14	16.2	83	12	14.4	169	26	15.3
Stecher[94]	548	95	17.3	108	33	30.6	656	128	19.5
Stortz[95]	199	23	10.6	87	22	25.3	286	45	25.7
Townsend & Coolidge[96].	724	182	25.0	276	68	25.0	1,000	250	25.0
Waller[97]	71	7	10.0	10	2	20.0	81	9	11.1
Author	295	41	14.3	203	40	19.7	498	81	16.1
Totals and averages .	23,853	4,643	19.4	9,753	2,798	28.7	33,606	7,411	22.1

It has been supposed that this extraordinary fatality of pneumonic fever in the female is largely confined to the menstrual and childbearing periods of life,[98] but the statistics of Klinger,[99] Stortz,[100] and of my own cases, render this improbable.

The occurrence of menstruation during an attack of pneumonic fever has had usually, in my experience, a beneficial influence.[101] Under such circumstances the fever often declines, the nervous excitement is lessened, and there is a distinct amelioration of all the symptoms.

According to Chomel,[102] menstruation increases the danger, whilst Grisolle[103] says that it increases the severity, but not the mortality of the disease.[104]

Pregnant females, according to Greene[105] and others, are necessarily in greater danger than those who are not in this condition, from the fact that there is added to the dangers of the disease those of abortion or premature delivery,[106] which occurs in a considerable proportion of cases.

Chomel[107] considers pneumonic fever in pregnant females as usually fatal; the danger being due to the impediment to respiration and the frequent occurrence of abortion. Of 39 cases analyzed by Chatelain,[108] abortion or premature delivery occurred in 19, and of these 19, 10 died, and of the 39, 20 died. Of 43 cases analyzed by Juergensen,[109] 25 aborted, and of these 7 died.[110] Of my 11 cases, 4 aborted and one died.[111]

Post-mortem parturition may occur, as in the case observed by Post,[112] in which a woman seven months pregnant died in the St. Louis Female Hospital in 1872, of pneumonic fever. There were no symptoms of labor before death, but shortly afterwards it was discovered that a living child had been born, which soon died.[113]

Pneumonic fever occurring during the puerperium is also extremely dangerous.[114]

Inasmuch as the different races of mankind have various physical and mental peculiarities, it is a fair inference that they will be differently affected by disease, and observation has abundantly confirmed the supposition in this disease. Pneumonic fever is very much more dangerous in the negro than in the Caucasian race.[115]

In estimating the mortality of any disease as it manifests itself in the negro of North America, it must be borne in mind that he has an inherent antipathy to consulting a physician. If he is indisposed.

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[41] Klinik d. Kinderkrankh., Berlin, 1865.

[42] Inaug. Dissert., Griefsw., 1868.

[43] Bull. de l'Acad. de med., 1863, T. xxvii, p. 676.

[44] *Am. Jour. Med. Sci., Vol. xiv.*

[45] Berliner k. Wochenschr., September 4, 1871.

[46] Op. cit., p. 209.

[47] Inaug. Dissert., Würzb., 1884, S. 10.

[48] Inaug. Dissert., Kiel, 1882.

[49] Inaug. Dissert., Würzb., 1877, S. 19.

[50] *Op. cit., Diss*

[51] Rufz, Jour. de med. et de chir., T. iii, p. 101; et al. Snow, N. Y. Med. Rec., June 15, 1889, p. 652, *considers the danger increased by the* presence of rickets.

[52] See also Loomis, Prac. Med., N. Y., 1884, p. 95; Schuyler, N. Y. Med. Jour., May 14, 1887, p. 543; et al.

[53] Wiener med. Wochenschr., 1857.

[54] Op. cit.

[55] Pneumonie, Leipzig, 1841, p. 304.

[56] Inaug. Dissert., Bonn, 1885, S. 19.

[57] N. Y. Med. Rec., March 28, 1885, p. 343.

[58] Statistik d. Pneumonie, u. S. W., Würzb., 1855.

[59] Lungenentzündung, Leipzig, 1861, S. 94.

[60] Op. cit.

[61] Bayer, ärztl. Intelligenzbl., 1874, Nr. 35 u. 36.

[62] Pneumonie, Wien., 1883, S. 159.

[63] [illegible] pzig, 1861, S. 154.

[64] [illegible] 1860.

[65] [illegible] 1877.

[66] Inaug. Dissert., Leipzig, 1866, S. 14.

[67] Inaug. Dissert., Würzb., 1884, S. 19.

[68] Diseases of the Chest, N. Y., 1856, p. 86.

[69] Trans. Am. Clinical Assoc., 1889.

[70] Medical Progress, February, 1890, p. 637.

[71] See Colin, Etudes clin. de med. mil., Paris, 1863; Hermann, Lungenentzündung, München, 1880, S. 6; et al.

[72] See Huss, Op. cit., S. 87.

[73] See Lebert, Berliner k. Wochenschr., Sept. 4. 1871; et al.

[74] See Wells, Jour. Am. Med. Assoc., Dec. 19, 1885.

[75] Bamberger, Wiener, m. Woch., 1857; Chatelain, Jour. de med. de Brux., 1870; Chomel, Op. cit., S. 305; Fox, Op. cit., p. 205; Franque, Inaug. Dissert, Würzb., 1855; Funck, Inaug. Dissert., Griefsw., 1868; Green, Oubeur, Dic. Med. N. Y. 1884, p. 881; Huss, Op. cit., S. 71; Lebert, Klinik d. Brustk. Tüb., 1873; Lepine, Pneumonie, Wien, 1883, S. 160; Pause, Lungenentzündung, S. 126; Robb, Jour. Am. Med. Assoc., Nov. 28, 1885, p. 614; Routh, Lon. Lancet, N. Y., 1855, Vol. xi, p. 145; Schapira, Inaug. Dissert., Würzb., 1877, S. 16; Stortz. Inaug. Dissert. S. 39; Swett, Dis. Chest. N. Y., 1856, p. 87; Waller, Inaug. Dissert. Erlangen, 1877, S. 25; Walshe, Dis. Lungs, *Phila. 1860, p. 214; et al.*

[76] —TABLE I, NOTES.—SHOWING DEATH RATE FROM ALL CAUSES BY SEXES IN MASSACHUSETTS.

YEAR.	Males Per 1,000.	Females Per 1,000.	Excess of Males over Females per 1,000.
1860	19.3	18.4	.9
1865	21.7	19.6	2.1
1870	19.5	18.6	.9
1875	21.8	20.5	1.3
1880	20.3	19.3	1.0
Averages	20.5	19.3	1.2

or even seriously ill, he either disregards his complaint, or makes use of the domestic remedies suggested by some aged negress, thus remaining for days in the most unsuitable surroundings, without any medical treatment, at a time when proper measures might be of much avail—until the malady has proceeded beyond the bounds of assistance.

It is a general impression with writers, that the strong, the robust and the generally healthy withstand attacks of pneumonic fever better than those of slighter build,[116] the cachectic and the sickly. This may be true in the experience of others, but it certainly does not accord with my own observation, and I have for many years looked upon cases of the disease occurring in the robust specimens of manly vigor with suspicion.

Irregular modes of living and habits of drunkenness[117] add greatly to the inherent danger of the malady.[118]

Huss[119] lost 20 per cent., and Fismer[120] 50 per cent., of alcoholic cases, and Greene[121] estimates the death-rate of such at from 25 to 50 per cent. I am inclined to think that, in confirmed drunkards, it exceeds even these figures.

The victim of chronic alcoholism is in such a state of physical and mental weakness as to be illy able to withstand the onslaught of any disease, and especially one of the gravity of pneumonic fever. He is usually a man having the appearance of robust health, but a careful scrutiny will reveal this to be a delusion and a snare. His bloated and rubicund visage, his ponderous abdomen and his full but soft fleshy parts are no more the indication of strength and vigor than is the padding of a Punch and Judy character. His digestive apparatus is in a state of chronic irritation, and it has for so long a time been accustomed to excessive stimulation that it no longer responds to ordinary irritation, and in the case of disease refuses longer to receive food or even the fiery draughts which have been the patient's ruin. The nervous system also weakens remarkably.

When pneumonic fever attacks such a person it is prone to pursue a latent and insidious course. The initial chill is either absent or but slightly marked. The patient has, for several days, lost his appetite and cannot retain upon his stomach his accustomed ration of alcoholic liquors. He is nervous by day and restless by night. He feels tired and languid, and no longer seeks his companions at his accustomed haunts, but prefers to remain at home, and yet is afraid to be alone. With the access of the disease he is at once and completely prostrated. He may have a cough, with expectoration and some uneasiness referable to the chest. The cough, if present, often escapes notice from the fact that these old topers have an habitual cough and hawking. If the lungs be now examined, the ordinary physical signs of pneumonic inflammation will be found. Delirium tremens is of very frequent occurrence, and the patient, obtaining no sleep, together with the constant action, absence of nutrition and the ravages of the disease, soon falls into a state of profound depression and usually dies.

The seat, extent and degree of the local inflammation will greatly modify the prognosis.[122] It is generally considered more dangerous when the upper lobes are affected[123] than when the lesion is basic, although this view does not accord with my experience or the opinion of a few others.[124]

Ruehle[125] is of the opinion that when the apex is affected, the fever continues longer, resolution is delayed and recovery is not so perfect as when the base is inflamed.

Auenbrugger[126] considered the danger enhanced when the local lesion was on the left, and Chomel[127] when on the right side. In my cases the fatality has been greatest when the right lung was inflamed, but I am inclined to attribute the result to the fact that the average extent of pulmonary involvement was greatest in the right sided cases.[128] The more extensive the local involvement, especially when both lungs are affected, the greater the danger.[129]

Schuyler[130] says that "inasmuch as the more extensive consolidations generally occur in robust subjects, who, as a rule, recover, and the less extensive and less perfectly formed processes more generally occur in depraved subjects in whom fatality is, as a rule, more frequent, therefore a greater extent of local process may be held as indicating a more tonic and resisting state of the patient, and a better prognosis, while a lesser extension may denote a more asthenic constitutional state, and hence a worse prognosis."[131]

The spreading and wandering forms of the disease are very fatal.[132] The occurrence of gangrene, abscess, general suppuration, etc., greatly increase the danger.[133]

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[77] Op. cit.

[78] Klinik d. Brustkrankh., Tüb., 1873.

[79] Stortz, Op. cit., S. 7.

[80] Biach, Med. Jahrb., Wien, 1879.

[81] Wiener med. Wochenschr., 1857.

[82] Op. cit.

[83] Klinger, Lungenkrankh. in Bayern, 1872, found the deaths in males more numerous than in females.

[illegible]

[illegible] 1879.

[illegible] S. 305.

[illegible] Wien, 1853, S. 37.

[illegible] S. 91.

[illegible]

[90] Ziemssen's Handb., Bd. V.

[91] Phthisis, Boston, 1836, p. 440.

[92] Berichte, 1865–75.

[93] Op. cit., S. 154.

[94] Inaug. Dissert., S. 14.

[95] Inaug. Dissert., Würzb., 1884.

[96] Trans. Am. Climat. Assoc., 1889.

[97] Inaug. Dissert., Erlangen, 1877.

[98] See Huss, Op. cit., S. 95.

[99] Pneumonie in Bayern, München, 1872.

[100] Inaug. Dissert., Würzb., 1884.

[101] See also Wunderlich, Spec. Bath. u. Therap., Stuttg., 1858.

[102] Pneumonia, Leipzig, 1841, S. 306.

[103] Traite de la pneumonie, Paris, 1864.

[104] See also [illegible] Syst. Med., Phila., 1880, Vol. II, p. 205; Huss, [illegible] 1861; et al.

[illegible] Med., N. Y., 1884, p. 881.

[106] Chatelain, Jour. de med. de Brux., 1870; Fox, Op. cit., p. 205; Gusserow, Berliner k. Wochenschr., 1880, Nr. 17; Huss, Op. cit.; Juergensen, Ziemssen's Handb., Leipzig, 1877, Bd. V, S. 127; Grisolle, Op. cit. p. 470; Lepine, Pneumonie, Wien, 1883, S. 188; Ringe, Volkmann's k. Vortrage, Nr. 174; Robb, Jour. Am. Med. Assoc., Nov. 28, 1885, p. 614; Wells, Ibid., Dec. 19, 1886; et al.

[107] Op. cit., S. 307.

[108] He thinks that during the last three months 50 per cent. die. See Jour. de med. et de chir. de Brux, 1870, Juine.

[109] Op. cit., S. 28.

[110] Op. cit., S. 127.

[111] For further information consult Carroll, Cincin. Lan and Obsr., Aug. 1862, p. 475; Da Costa, Jour. Am. Med. Asso., Dec. 17, 1887, p. 791; Fisher, N. Y. Med. Rec., July 28, 1888, p. 93; Folkmann, Inaug. Dissert., Erlanger, 1877, S. 35; Gehrung, Am. Prac., Aug. 1877, p. 74; Harrison, Jour. Am. Med. Assoc., Aug. 13, 1887, p. 210; Heygate, Lancet, 1887, Vol. xi, p. 1252; Kemper, Med. World, 1888, p. 261; Korotkevich, Russkaya Med.; McManus, N. Y. Med. Rec., Sept. 8, 1888, p. 260; Pause, Lungenentzündung, Leipzig, 1861, S. 84; Polk, N. Y. Med. Jour. Sept. 15, 1888, p. 284; Rall, Inaug. Dissert. Erlangen, 1887, S. 34; Richardson, Cin. Lan and Observ. Oct. 1862, p. 591: Schapira, Inaug. Dissert., S. 19; Stechert, Inaug. Dissert., Leipzig, 1866, S. 28; et al.

[112] Jour. Am. Med. Assoc., Oct. 29, 1887, p. 566.

[113] Coles, Ibid., p. 566.

[114] Barnes, Obst. Trans., Vol. iv, p. 55; Chomel, Op. cit. S. 307; Derville, Pleuro-pneumonie dans la Fievre puerperale, Paris, 1874; Fox, Op. cit. p. 205; Kreider, N. Y. Med. Rec., Sept. 7, 1889, p. 260; Pause, Op. cit., S. 85.

[115] See Armstrong, U. S. Marine Hospt. Rpts., 1886, p. 123; Banjon, Mal. de Cayenne, T. 1, p. 73; Cartwright, N. O. Med. Jour., Vol. ix, p. 205; Daniell, Med. Topog. Guinea, p. 95: Drake, Dis. Int. Valley N. A., Phila., 1854, p. 416; Grier, N. O. Med. Jour., Vol. ix, p. 430: Harris, Trans. Am. Med. Assoc., Vol. v, p. 373: Jackson, Sketches, Vol. xi, p. 84; Lewis, N. O. Med. and Surg. Jour., Vol. iv, p. 33: La Roche, Pneumonia, Phila., 1854, p. 416; Pendleton, Southern Med. and Surg. Jour., 1849; Robb. Jour. Am.

The duration of the disease has an important bearing upon the prognosis, and "it is often a question of the intensity of the disease on the one hand and the resisting powers of the individual on the other."[134] If improvement does not occur at about the time convalescence usually begins the prognosis is rendered grave.

Epidemics of pneumonic fever vary greatly in their fatality; in some scarcely any die and in others almost every patient is doomed. The epidemic prevalence of other diseases, *e.g.*, typhoid, typhus[135] or cerebro-spinal[136] fever, etc., increases the severity and danger of pneumonic fever.

Complications of all kinds add to the fatality of the disease.[137] The great variety of these, together with their nature, seat, tendencies and surrounding influences renders an intelligent analysis of the increased dangers impracticable. It may be said that, as a rule, all anomalous features are of evil import. The subsequent attacks are attended by less danger than are the primary.[138]

The death-rate of pneumonic fever varies from year to year,[139] and month to month, the variations being due to accidental influences[140] which either elude observation or defy analysis.

Briquet,[141] Fox[142] and others[143] consider pneumonic fever more fatal during the cold than the warm months, but Grisolle[144] objects to this conclusion and it is not in accordance with my experience.[145]

In fatal cases death may occur in a variety of ways. In some rare cases the patient is overwhelmed by the onset of the disease and dies in a few hours from extensive pulmonary congestion, with or without profound cerebral symptoms. In another small proportion of cases the morbid processes are carried a step beyond this. The fever rises rapidly to a high point, there is great respiratory oppression, and after perhaps but twenty-four or thirty-six hours convulsions, delirium or coma ends the scene. In these cases the mind of the beholder is appalled by the suddenness with which life was extinguished.

At a later period, also, death may come on very swiftly, sometimes like a flash, from heart clot or cardiac paralysis. In general, however, when death occurs after the first days of illness, the end is approached very gradually and with ample warning.[146] The temperature remains high, cyanosis appears and gradually deepens; the respiratory oppression is increased, and breathing becomes more and more difficult and, finally, more and more shallow; the pulse beats with great rapidity and becomes smaller, weaker, and irregular; the nose, then the hands and lastly the feet, ear and tongue become cold and the surface of the body is covered with a cold and clammy perspiration; the senses are usually benumbed[147] and there is muscular paresis, and often slight tremor; the cough becomes less frequent and weaker and finally ceases altogether; the lower jaw is relaxed; the tongue, mouth and pharynx becomes dry and deglutition becomes difficult and finally impossible; the secretions are not removed from the air passages and a loud and ominous tracheal rattle startles and appalls the listener[148]; the respirations grow weaker and weaker, and with pauses of longer and longer duration, until at last they cease and life is a thing of the past.

It has long been supposed, erroneously, I think, that death, when it occurs, is likely to come at the end of a septenary period. Thus Delafield[149] in an analysis of 123 fatal cases found that the largest number died on the seventh day; the next largest on the fourteenth day; the next largest on the twenty-first day, and the next largest on the twenty-eighth day. These remarkable coincidences probably could not be duplicated in any other series of cases.[150]

No series of observations sufficiently extensive have been made as to the hour when death oftenest occurs; but of between 5,000 and 6,000 deaths from all causes Haviland[151] found the greatest number to have occurred between 1 and 8 o'clock A.M., and the least between 1 and 12 o'clock P.M., whilst Burns[152] in analyzing 15,000 deaths came to the conclusion that death occurs irrespective of hours.

Instances of sudden death during the progress of this disease are of comparatively frequent occurrence and must have been met with by almost every general practitioner of much experience.[153] Cases of this description, caused by heart-clot, paralysis of the heart and apoplexy are readily explainable, but there remains a certain proportion of cases in which no gross anatomical lesion can be found to explain the untoward result, and which must, with our present knowledge, remain with the occult mysteries of nature.

A man aged 60, apparently in his usual health, went from camp to the city (three miles by train) one morning. At noon he was taken suddenly and violently ill at the house of a friend, and within two hours was sent to the City Hospital. The attending physician reported that he was received unconscious, cold extremities, rapid breathing, temperature 103, and almost moribund. He died within six hours of the attack. Autopsy revealed: lower right lobe passing into a stage of gray hepatization, . . . remainder of lungs deeply engorged.[154]

An intelligent man, aged 78, was the subject of

Med. Assoc., Nov. 28, 1885, p. 614; Valleix, Guide du med. prat. T. 11, p. 259; et al.

[116] See Fox, Op. cit. p. 206; Huss, Op. cit.; et al.

[117] Has no influence! Owen, N. Y. Med. Rec., Aug. 18, 1888, p. 185.

[118] See Copland, Med. Dic. N. Y., 1855, Vol. 1; Drummond, Lancet, 1891, Vol. 1, p. 647; Dusol, These de Paris, 1876; Fismer, Arch. f. k. Med., Bd. xi, 1873, S. 391; Flint, Prac. Med. Phila. 1868, p. 184; Foramel, Cin. Lan. and Clinic, Jan. 15, 1887, p. 86; Fox, Op. cit., p. 207; Gerhard, Dis. Chest, Phil., 1860, p. 202; Green, Quain's Dic. Med., p. 881; Huss, Op. cit., S. 139; Lepine, Op. cit., S. 160; Loomis, Pepper's Syst. Med., Phila., 1885, Vol. iii; Peters, N. Y. Jour. Med., Vol. iii, p. 335; Robb, Op. cit., p. 614; Smith, Guy's Hospt. Rpts., Vol. xliv, p. 59; Swett, Dis. Chest. N. Y., 1856, p. 87; Sturges, Pneumonia, London, 1876, p. 87; Watson, Prac. Phys., Phila., 1845, p. 584; et al.

[119] Op. cit., S. 139.

[120] *Op. cit., S. 191.*

[121] Op. cit., p. 881.

[122] Gerhard, Dis. Chest, Phila., 1860, p. 211, and Ziemssen, Pleuritis u. Pneumonie, Berlin 1862, S. 261, think that the seat and extent of the local affection exert *no influence over the course of the disease.*

[123] Andral, Med. Clin., Phila., 1843, Vol. ii, page 205; Chomel, Op. cit., p. 295; Davis, N. W. Med. Jour., Vol. iii, p. 429; Fox, Reynold's Syst. Med., Phila., 1880, Vol. ii, p. 206; Green, Quain's Dic. Med., N. Y., 1884, p. 880; Krupp, in Chomel's Pneumonie, S. 25; Louis, Roch. sur effets de la saignee, p. 42; Robb, Jour. Am. Med. Assoc., Nov. 28, 1885, p. 614; Rilliet et Barthez, Mal. de la enf.; Scheef, Inaug. Dissert., Tüb., 1882, S. 26; Schuyler, N. Y. Med. Jour., May 14, 1887, p. 541; Todd, Brit. Med. Assoc. Jour., May 15, 1852, p. 483; Watson, Prac. Phys., Phila., 1845, p. 583; et. al.

[124] Collective Invest. Rec., London, 1884, Vol. ii; Gerhard, Op. cit.; Ziemssen, Op. cit., S. 211.

[125] Ziemssen's Handb., Leipzig, 1877, Bd. V. Heft 2, S. 28.

[126] Inventum Novum, etc., Vien., 1761, sec. xxv.

[127] Op. cit. S. 296. See [illegible]

[128] In Townsend and [illegible] 1889, cases the fatality was, accordi[illegible]s follows: Right lung, entire, 74 cases, 39 fatal, 53%; right lung, lower lobe, 377 cases, 47 fatal, 14%; right lung, middle lobe, 19 cases, 4 fatal, 22%; right lung, upper, 105 cases, 25 fatal, 24%: Total 575 cases, 115 fatal, 20%. Left lung, entire, 39 cases, 26 fatal, 67%; left lung, lower lobe, 216 cases, 28 fatal, 13%; left lung, upper lobe, 31 cases, 7 fatal, 23%; total 286 cases, 61 fatal, 21.4%. Duplex 111 cases, 63 fatal, 57%.

[129] Chomel, Op. cit., S. 295; Fox, Op. cit., p. 206; Green, Op. cit., p. 881; Huss, Op. cit., S. 114; Martyn, London Lancet, N. Y., 1854, Vol. i, p. 533; Robb, Op. cit., p. 614; Smith, Guy's Hospit. Repts. Vol. xliv, p. 59; Todd, Op. cit., p. 483; et al.

[130] N. Y. Med. Jour., May 14, 1887, p. 541.

[131] These premises are opposed to my experience.

[132] Drummond, Lancet, 1891, Vol. 1, p. 647; Fox, Op. cit., p. 206; Green, Op. cit., p. 88; Lépine, Op. cit., S. 18 u. 158; Pause, Lungenentzündung, Leipzig, 1861, S. 9; et al.

[133] See especially Chomel, Op. cit., S. 297; Huss, Op. cit.

chronic genito-urinary disease. He complained of colic at 5 P.M., and was given an enema. He continued restless until midnight when he called for the commode, arose, sank back into the bed and expired. The autopsy revealed inflammation of the base of the right lung.[155]

A large and well nourished man, aged 76, felt unwell for several days but was walking about, with a temperature of 99.5°; nothing wrong was discovered with the lungs upon examination. Next morning he was restless, had a temperature 100°, pulse 105, feeble, and respirations 28. Distress in epigastrium; no cough, but there was dullness over the lower two-thirds of the right lung, with very little air entering the part. An hour later he raised up, called the nurse and expired. The autopsy disclosed inflammation of nearly the whole of the right lung.[156]

A female, suffering from pneumonic fever, locally affecting the middle lobe of the right lung, was so little ill on the third day that she persisted in getting out of bed. This she did, dressed, walked across the room and fell dead.[157]

A man, aged 28, was "admitted with pneumonia of the lower lobe of the left lung. The attack was a slight one, and the patient improved rapidly. On the morning of the 16th day, as he returned from the bath room, he staggered and fell. He was picked up and put to bed, when he expired almost instantly." The autopsy showed the lower lobe of the left lung in a state of gray hepatization. Both lungs were œdematous.[158]

As shown in the last case, sudden death in pneumonic fever is not confined to the acute stages of the disease, but it may occur long after apparent convalescence has set in, and this too, irrespective of the character and severity of the attack.

In the autumn of 1875, I attended a little girl of 8 years, with a mild attack of pneumonic fever, the local lesion being confined to the base of the right lung. The disease pursued an ordinary, but mild course and deferverscence by crisis occurred on the fifth day. For a week she remained tired and weak, but improved daily. Her cough had almost ceased, there was no dyspnœa and her appetite was good. One morning, exactly a week after the crisis, her mother came to her bedside, requested her to arise and asked what she desired for breakfast. The child not appearing at the table, the mother ten or fifteen minutes later returned to the bed chamber to find her child dead. It was supposed that she had attempted to arise and had instantly expired.[159]

A certain proportion of persons have hearts of very little stability and a trifling impediment to the heart's action may cause sudden alarming or fatal symptoms. It is this contingent which furnishes the majority of sudden deaths in pneumonic fever.

In estimating the chances of recovery in this disease the local lesions, general symptoms and the prevailing morbid influence should all be carefully considered. The omission of this cardinal principle by the medical attendant may be the cause of lamentable errors. A prognosis based upon general impressions is valuable, but a careful consideration of all the surrounding circumstances should not be neglected. In formulating an opinion individuality must always play an important part, as the prognosis in any individual case will vary from the average from an infinity of circumstances.

For this reason numerical calculations must always occupy a secondary place in estimating the fatality of this malady when an individual case is concerned. In this field there must be considered a multitudinous array of circumstances which cannot possibly be considered by the numerical method of calculating chances. Individual cases can only be estimated separately. If, however, we desire to estimate the average probable death rate we may safely invoke the aid of the doctrine of numerical chances, provided, always, that in making the calculation we employ practically infinite numbers.

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PIONEER CRANIECTOMY FOR RELIEF OF MENTAL IMBECILITY DUE TO PREMATURE SUTURAL CLOSURE AND MICROCEPHALUS.

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Early in the month of August, 1888, I received a letter from a lady residing in the interior of California, stating that she desired to consult me concerning her infant, then nearly 9 months of age, which presented signs of mental imbecility. At the time appointed for the consultation, the lady presented herself with her infant. The child, otherwise in good health and well nourished, was decidedly microcephalic. The cranium was symmetrical, and only deviated from normal type in the smallness of its volume. The mother stated that at birth the anterior fontanelle was wholly closed, and the posterior one nearly so.

The mother was especially solicitous to learn wheth-

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[134] Green, Op. cit., p. 882.

[135] See Caton, Lancet, 1884, Vol. 11., p. 136.

[136] Ruenberg, Berliner. k. Wochenschr., 1888,.S. 94; et al.

[137] See Bennett, Restorative Treatment Pneumonia; Besnier, Thèse de Paris; Biach, Op. cit.; Brandes, Virchow's Archiv. bd. xv., S. 210; Doubleday, N. Y. Med. Rec., Mar. 28, 1885, p. 343; Dusol, Thèse de Paris, 1876; Flint, Med. News, Nov. 28, 1885, p. 605; Glasgow, St. Louis Cour. of Med., Mar. 1886, p. 195; Hartshorn, Med. News, Apr. 8, 1888; Huss, Op cit.; Huxham, Epidem. Dis. London, 1748, p. 59; Juergensen, Op. cit.,; Lepine, Op. cit., S. 166; Moore, N. Y. Med. Rec., July 10, 1886, p. 57; Lawrence, London Lancet, N. Y., 1853, Vol. 1, p. 73; Hyde, Med. News, Nov. 28, 1885, p. 605; Moxon, Lancet, 1884, Vol. 1, p. 53; Rilliet et Barthez, Op. cit.,; Robb, Op. cit., p. 614; Sturges, Op. cit.; Swett, p. 87; Van Bibber, Jour. Am. Med. Assoc., July 28, 1888, p. 110; Ziemssen, Op. cit., S. 261

[138] See Landsberger, Inaug. Dissert. Berlin, 1857, S. 16; Lepine, Op. cit; Leudet, Jour. med. del hotel Dieu de Rouen; Stortz, Inaug. Dissert., Wurzb., 1884, S. 51; et al.

[139] See Huss, Op. cit., S. 80.

[140] Glasgow, Op. cit., p. 195.

[141] Arch. gèn. de med. 1840.

[142] Op. cit., p. 206.

[143] See Besnier, Op. cit.; Huss, Op. cit.,; Sestier, Chomel's Pneumonie, Leipzig, 1841; Stortz, Inaug. Dissert., Wurzb., 1884.

[144] Op. cit.

[145] See also Reitz, Inaug. Dissert., Jena., 1868, S. 8.

[146] The earliest, and, therefore, the most valuable sign of approaching death is an up and down movement of the trachea—anticipating alarming changes in the pulse and temperature. It is due to paresis of the infra-laryngeal nerve, and sounds the first note of alarm that the central nervous system is profoundly and irretrievably affected. See also Shrady, N. Y. Med. Rec., 1875, No. 230.

147 There are exceptions to this rule.

[148] It seems that this is unnoticed by the patient himself.

[149] N. Y. Med. Jour. Vol. xxvii, p. 68.

[150] See also Cleghorn, Op. cit., S. 243; Dietl, Op. cit., S. 72; Doubleday, Op. cit. p. 343; Green, Op. cit., p. 878; Hermann, Op. cit., S. 22; Pause, Op. cit., S. 155; Rept. Bd. Health, D. C., 1878, p. 113; Stecher, Op. cit., S. 24; Stortz, Op. cit., S. 57; Sturges, Op. cit., p. 272; Swett, Op. cit., p. 85; Townsend and Coolidge, Op. cit.; Wunderlich, Inaug. Dissert., Tub., 1858, S. 25; et al.

[151] London Lancet, N. Y., 1861, Vol. xi, p. 616; See also Berens, Phil. Med. Times, Apr. 3, 1875.

[152] Burns, N. Y. Med. Jour., Jan. 4, 1890, p. 17.

[153] See also Ashton, London Lancet, N. Y., 1855, Vol. 1, p. 260: Green, Op. cit., p. 878; Quain, London Lancet, N. Y., 1855, Vol. 1, p. 260.

[154] Patton, Jour. Am. Med. Assoc., Oct. 16, 1886, p. 427.

[155] Patton, Op. cit.

[156] Patton, Op. cit.

[157] Ewens, Lancet, 1890, Vol xi, p. 662.

[158] U. S. Marine Hospt. Repts. 1883, p. 242.

[159] See for other cases Biggs, N. Y. Med Rec. July 21, 1888, p. 77; Cruveillier, Path. Anat. Liv. xxix; Fox, Op. cit. p. 183; Heale, London Lancet, N. Y., 1853, Vol. 1, p. 64; Lesser, Berliner k. Wochenschr., 1888, S. 305; Maschka, Ibid, S. 305; et al.

er the child's brain was otherwise healthy; and on being assured that there were no evidences to the contrary, she asked if an operation were not possible, whereby the brain could enlarge; or, in her own remarkable words, she said, "Can you not unlock my poor child's brain and let it grow?" I replied that such an operation had never been done, and if performed, it would be purely an experiment. I said further, that it would be perilous, and might end fatally, and that before the operation was adventured, she had better return home and maturely reflect on the matter. She did so, and at the end of three weeks returned, and said that she desired to have the operation performed.

The infant was operated on, the 28th of August, 1888, in the presence and with the assistance of Dr. R. H. Plummer, Professor of Anatomy in Cooper Medical College, and Dr. Chas. E. Farnum, Demonstrator of Anatomy. The triple anæsthetic A. C. E. was used; yet it acted badly. The incision was made through the scalp, in the sagittal plane, from the forehead to the occiput, and the scalp next being reflected laterally, an opening was made with a small trephine in the summit of the frontal bone, on each side of the superior longitudinal sinus. Through these openings, strong blunt scissors were introduced, and each parietal bone divided antero-posteriorly. The median strip of bone, which was an inch broad, and extended from the anterior to the posterior fontanelle, was easily uplifted and removed by the aid of a blunt dissector. There were next removed, on each side, sections of the remaining parietal bones; so that the excised spaces, in totality, resembled a cross, of which the arms were of equal length and breadth. In this parietal osteotomy, the underlying dura mater was separated from the bone, and protected from the cutting scissors, by the blunt dissector. There was but slight hæmorrhage, and the wound was closed by metallic sutures.

The child lived but fourteen hours after the operation, and death was clearly due, in a great measure, to the prostrating effect of the anæsthetic, which, at the onset, induced a cyanosis from which the child never rallied.

Thus, as seen, craniectomy, which is on trial as a means of relieving infantile dementia arising from premature sutural synostosis and concurrent microcephalus, was due to the inspiration of maternal affection; to a mother's thought, reaching out into the region of the untried and unknown, in search of relief for her unfortunate offspring.

A second craniectomy, performed by the writer some months ago, on an imbecile microcephalic infant, in which the exsected space resembled a letter H, has been crowned with better results: the child lives, and gives unequivocal evidence of mental improvement.

As just said, craniectomy is on trial, and though the surgeon's knife may "unlock the brain," it remains for futurity to determine how far his work will remove the penumbral shadow which microcephalus casts on infantile mentality.

IS DENTISTRY A DANGEROUS PROFESSION?—Dr. Buxton, in the *Dental Record*, asserts that dentists suffer to an unusual degree from neurasthenia, nervous debility, migraine, sciatica, herpes zoster, insomnia, etc. He attributes this to confinement, over-work and bad air.

BOOK REVIEWS.

CALENDAR OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND. London: Taylor and Francis, 1891. Price one shilling.

This is a model report or annual embracing over 370 pages. It is clearly printed and stoutly bound as all such handbooks should be. The lists given by the Secretary of the College for July 9, 1891, contain the names of 1111 Fellows and of 16,622 members then living; these lists occupy 170 pages. The report of the Conservator of the Hunterian Museum shows important additions to the teratological and anatomical departments. During the year the president, Mr. Thomas Bryant, gave thirty-nine models illustrative of human anatomy, made by the late Mr. Towne of Guy's Hospital. Another unusual contribution is catalogued as native instruments, used in India, in operating for cataract.

RAILWAY INJURIES IN THEIR MEDICO-LEGAL AND CLINICAL ASPECTS. By HERBERT W. PAGE, M.A., F. R. C. S., Surgeon to St. Mary's Hospital. London: Charles Griffin & Co. 1891.

This is a well written book on a subject that has not been overdone. The work is dedicated to Professor Charcot, who has contributed so freely to the elucidation of nervous railway problems. Mr. Page's point of view is, for the most part, that of the railway surgeon, but he aims to be fair and judicial, although always demanding good clinical testimony as to actual lesion of the cord or nervous system before admitting the latter to be the case. The author inveighs warmly against frequent examinations of the back of a person alleged to be suffering from spinal injury, for a repeated handling of the part is the very way to awaken undue nervousness and a hyperæsthesia that is often most distressing. The patient is thus oftentimes made worse and the diagnosis befogged.

NECROLOGY.

William H. Long, M.D.

Surgeon Wm. H. Long, of the U. S. Marine Hospital Service, died at the Marine Hospital, Cincinnati, O., January 5, 1892. Dr. Long was a native of Kentucky, and served as a medical officer of the Kentucky Volunteers during the latter period of the late war of the Rebellion. In 1875 he was appointed an Assistant Surgeon and stationed at the U. S. Marine Hospital at Louisville. He was promoted to be a surgeon, while serving at that station, and subsequently commanded the marine hospitals at Detroit, Chicago, and Cincinnati. He was an officer of fine executive ability, and an excellent operator; his herniotomy record being second to none in the service.

In person he was very tall, being six feet and four inches in height, and he was a man of the most charming and genial manners. His wife died only a few months since, and he leaves two minor children; son and a daughter.

Dr. Long leaves many sincere mourners, not only in his own corps, but in the medical profession at large, among whom he was widely and favorably known.

DR. FRANK DONALDSON, of Baltimore, died December 9, of renal disease. He was the well-known professor of laryngology in the University of Maryland. He was a native of Baltimore, in 1823, and was educated in that city and in Paris. He was a lecturer in the College of Pharmacy, and in the University medical department for nearly thirty years. He had been for many years the medical referee of the Mutual Life Insurance company and examiner for other corporations. He was the author of numerous physiological and special contributions to both home and foreign journals.

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SATURDAY, JANUARY 9, 1892.

BACTERIUM COLI COMMUNE.

This microörganism, originally described by ESCHERICH in 1884, has recently been the subject of much investigation by the French, and although some differences of opinion exist, it seems about to take a somewhat prominent position in pathogenesis. It is a constant inhabitant of the colon, and is particularly prominent in the stools of healthy breast-fed infants. In 1890 RODET and ROUX announced that the EBERTH bacillus, the supposed cause of typhoid fever, was identical with the bacterium coli commune. This view was strenuously opposed by CHANTEMESSE and WIDAL, in a communication to the Paris Academie de Medicine.[1] Whatever be the merits of this controversy, certain other observations have been made, and not denied, which indicate that this bacillus has a wide range of pathological influence.

CHANTEMESSE, WIDAL and LEGRY, in a recent communication,[2] record two of their own observations. In the first case, an old man dying in the algid stage of what was apparently cholera nostras, presented at the autopsy, made a few hours after death, some unimportant changes in the bowels, a normal spleen, and small and soft liver and kidneys. Parenchymatous cultures remained sterile, but in the fæces, the peritoneum, and the bile, the bacterium coli commune was found. The second case was a woman, who developed intestinal obstruction, with symptoms of peritonitis, in the fourth month of her pregnancy. A retroversion of the uterus was corrected with resulting improvement in the condition, but abortion followed, and in two days more fever reappeared. In the fetid clots removed from the uterus, the bacterium colico mmune, or the coli-bacillus, as the reporters prefer to call it, was found to exist in a state of pure culture. At the autopsy, adhesion of the intestine to the uterus and a peritoneal abscess were found. In the pus, the blood of the heart, in the uterus, etc., the coli-bacillus was found in a state of purity. There were no marked lesions of Peyer's patches. CLADO and LARUELLE have found that this bacillus is capable of traversing the intestinal wall in cases of strangulated hernia, and in all such cases examined by them, it was found in the liquid of the sac, the peritoneal and pleural fluids, in the blood, and in the organs.

This microörganism may invade the biliary passages and produce either a cholecystitis, or a suppurative angiocholitis or even hepatic abscess. It may pass even farther and produce an abscess of the thyroid body.

These authors believe that the greater number of the cases of suppurative meningitis recently published and ascribed to pseudo-typhoid bacilli, are really due to infection by the coli-bacillus. Early last December, SEVESTRE and GASTON reported to the Societe Medicale des Hopitaux, a case of meningitis caused by the coli-bacillus. These others have isolated a germ having all the characteristics of the coli-bacillus, from two cases of empyema.

The cholera bacillus is not found outside of the intestines, but the bacillus found by EMMERICH in the blood and organs of patients dead of cholera has been identified by WEISSER as the coli-bacillus. Intestinal lesions, no doubt, favor the transmission of this germ to distant tissues.

At the session of the Societe de Biologie, of December 12, 1891, ACHARD and RENAULT[3] reported that they had found in the kidneys of a pregnant woman, attacked with nephritis, a bacillus which presented all the characteristics of the coli-bacillus. The conditions were such as to exclude the hypothesis of the post-mortem penetration of the microbe into the organs. They then sought to discover the relations of the coli-bacillus to the bacterium pyogenes, to which is attributed the greater part of the cases of urinary infection, and concluded that the two bacilli were identical. At the conclusion of this report, M. STRAUS stated that he had just received from DR. KROGIUS, of Helsingfors, a paper, as yet unpublished, in which he says: "The microörganism which I have met most frequently in urinary patients, and which I hold is identical with the bacterium pyogenes of ALBARRAN and CLADO, is nothing else than the bacterium coli commune."

The most interesting, perhaps, of all the recent observations relating to the coli-bacillus are those of DR. ADENOT,[4] of Lyon. In the laboratory of ARLOING, of Lyon, he examined five cases of appendicitis, bacteriologically. Control examinations were made by RODET. In three cases the pus of the abscesses contained the coli-bacillus in pure culture, and in two of these the appendix was intact, that is, no macroscopic perforation had occurred. In the fourth case, the pus was found to contain two bacilli, the coli-bacillus and the staphylococcus pyogenes aureus. No autopsy was obtained in the case, which seemed to be further complicated by tuberculosis of the intestines. The fifth case is peculiarly suggestive. An early operation revealed an enlarged appendix, *but no peritoneal pus. After ligation, the appendix* was excised; its mucous surface was red, and covered with thick, glairy mucus. In the center of the appendix was a hard, stercoraceous calculus, about the size of a grain of wheat. The mucous exudate was removed with care, and gave pure cultures of the coli-bacillus.

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[1] Oct. 13, 1891,

[2] Le Bulletin Medical, Dec. 13, 1891, p. 1139.

[3] La Semaine Medicale, Dec. 16, 1891, p. 491.

[4] Gazette Medicale de Paris, Dec. 5, 1891, p. 580.

None of these observations can be considered conclusive; in fact, the wide field of action of the coli-bacillus, here implied, is of itself suggestive of some error. It is not at all certain that the same, and all means for recognizing the coli-bacillus, were employed by the different investigators, and it is by no means certain that they all were working with the same microörganism.

The very suggestive results make a strong appeal for further research, but speculation is, as yet, out of place.

RECOVERY OF A LOST INTUBATION TUBE.—We find in the *Boston Medical and Surgical Journal*, for December 3, a paragraph which describes the manner in which electricity was made serviceable for the detection and recovery of a lost intubation tube. A child between two and three years of age, suffering from croup, underwent the operation of intubation with success, but when the surgeon, Dr. J. Mount Bleyer, went to remove the tube, the latter could not be found. In the hope that the tube might be retained in the upper air passages, he resorted to the use of a telephonic test to locate the position of the tube. A metallic probe was attached to an electric wire which terminated in a telephonic receiver; this probe was passed down through the larynx and when it touched the lost tube a distinct click was communicated to the ear through the receiver. In this manner the distance below the larynx was measured off, and the proper location for the performance of a tracheotomy was determined. The operation was made and the tube extracted; the child survived and at last accounts was on the road to recovery.

"FASTING" EXHIBITIONS CONDEMNED.—The verdict of the coroner's jury of New York City in the case of the death of Stratton, the "faster," is worthy of commendation. That decision recites that the so-called "fasting exhibitions are to be regarded as demoralizing and criminal, and they should be prohibited by legal enactment." The duration of this unfortunate starved being's alleged fast was forty-one days.

AN IMPORTANT DECISION.

In 1885 a Mr. Hartt, who had been a patient at the New York Hospital, brought suit against that institution for alleged ill-result following an operation performed upon him by Dr. W. T. Bull, one of the surgeons to the hospital. This suit was tried before Judge Barnard and a jury at White Plains, the question being as to whether the surgeon had performed the operation skilfully or not. A verdict was rendered in favor of the hospital.

During the past year the plaintiff brought another suit, on the same grounds, against Dr. Bull. This suit came before Judge Morgan J. O'Brien, last week, the defendant's counsel, Mr. Austen G. Fox, putting in the plea that as the suit had already been brought against the hospital, and had failed, the plaintiff had no standing in court, his case having been finally disposed of.

In this view the Judge concurred, rendering the following decision:

"It seems to me that, upon the facts as they are now presented, the action made by counsel for the defendant for a direction of a verdict in his favor should be granted.

"The action was originally brought against the New York Hospital for the alleged negligence of one of its doctors. The question then at issue was fairly and fully presented during the trial of the case as to the negligence of the doctor, and upon that there has been an adjudication in favor of the hospital.

"It seems to me upon every principle that it is in the interest of justice, and in accordance with public policy, that after a man has had his day in court, and has been granted and accorded every opportunity of fully and fairly presenting his case, and after he has made his election and tried his case, that he should not be allowed to come in court and try the same question over again.

"Concededly, the liability of the hospital in that case, if it was a liability at all, was a derivative one, being a legal liability resulting from the fact that it had connected with this hospital this doctor, the defendant in this case, no matter on what theory, whether upon the doctrine of election, or whether privy or party to the act or not.

"Besides, putting the matter on the broad ground of public policy, the whole purpose and policy of the law is to put an end to litigation, and this is one of the cases to which that principle should be applied, namely, that when once a man has had his day in court, and had an opportunity of fully and fairly presenting the question at issue, he should not be allowed a second trial for the purpose of presenting the same question to the consideration of the jury.

"The question is a new one in this State. It has been passed upon in other States, but the precise question has not been passed upon here.

"I will direct a verdict for the defendant and require the exceptions to be heard in the first instance at General Term."

Let us see what might result in case a different view had been taken. Given a case in which, during the absence of the regularly appointed surgeon to a hospital, and the tenancy of a *locum tenens*, an operation is performed by one of the house-surgeon's assistants with unfavorable result.

The patient brings suit against the hospital corporation, and failing, sues the attending surgeon. Unsuccessful in this, he sues the *locum tenens* as representative of the surgeon. Then, in turn, the house-surgeon and the latter's *assistant*.

The same case would go before successive juries, each time upon the same merits, but with a different defendant. The inconvenience and expense at which the hospital and its surgeons would be placed can well be imagined.

It is a principle in law that in failure of an action against the master for the act of a servant the same suit cannot be brought against the servant. Judge O'Brien, in his decision, looks upon the hospital as the master, and its medical officers as its servants. The man who pleads malpractice must elect whom he will proceed against, and must abide by the result of that trial.—*U. S. Med. Record.*

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(*Continued from page 21.*)

MORNING SESSION, SEPTEMBER 25, 1891.

The meeting was called to order at 10:20, with President Massey in the chair.

J. H. Kellogg, M.D., of Battle Creek, Mich., read a paper entitled

SUMMARY OF MY PERSONAL EXPERIENCE WITH ELECTROLYSIS IN THE TREATMENT OF FIBROID TUMORS.

I have treated in all between eighty and ninety cases. Have summarized the results in sixty cases.

Of these sixty cases, four were not treated a sufficient length of time to give the treatment a fair trial. Nine cases were made worse, or not much benefited. One of these was a soft myoma, which does not yield satisfactory results from this treatment. In five cases, the tumor was not diminished in size, but other symptoms were considerably relieved. In eleven cases, the tumor was not diminished, but the other symptoms, pain, weight, etc., entirely disappeared. In seventeen cases, the tumor was considerably diminished and the patient restored to good health. In fourteen cases, the tumor disappeared entirely, or became barely perceptible.

From a study of these cases, I found thirty-two were interstitial, nine subperitoneal, and fifteen subperitoneal and interstitial. The results in these several classes were as follows:

Of the thirty-two interstitial tumors, in nine cases the tumor was diminished in size and other symptoms cured. In six cases the tumor was not diminished in size, but the other symptoms disappeared. In nine cases the tumor was not diminished, but other symptoms were in part relieved. In the fourteen cases which comprised all the cases completely cured, both the tumor and the symptoms disappeared.

In the nine cases of subperitoneal growths, four were not benefited, or made worse. In one case there was slight benefit, in two, other symptoms were relieved, but the tumor was not reduced in size, and in two, the tumor was reduced in size, and other symptoms wholly relieved.

In the fifteen cases in which the tumor was both subperitoneal and interstitial, five cases were a complete failure, one slightly benefited, four relieved of symptoms without reduction of tumor, and in five, there was reduction of tumor and cure of other symptoms.

From these statistics, it appears that the cases of fibroid most benefited by electrolysis, are cases in which the growths are interstitial. Those next to have the growth benefited, are interstitial and subperitoneal. Those least benefited, are subperitoneal. Those most amenable to treatment are submucous, but of this class no well-defined cases have come under my observation.

I have arranged a table, which presents the results in fifty-six cases, according to which it appears that of the cases of interstitial fibroid, 43.7 per cent. were cured, while all were benefited and none made worse. Of the other varieties, none were absolutely cured, and in the cases of subperitoneal growths, 44.4 per cent. were either not benefited, or made worse, and of the subperitoneal and interstitial, 33.3 per cent. of the cases fall in the same category.

It having occurred to me that the age of the patient might be a factor of some importance, I made a study of my cases from this standpoint, and found that of the fourteen cases in which no material results were accomplished, 78.7 per cent. of the patients were under 40, and 42.7 per cent. did not exceed 35. In cases of fibroid tumor in which other symptoms were cured, but in which the tumor was not diminished in size, the average age was 43.7 years. Cases in which the tumor was considerably diminished and the patient restored to good health, averaged 40. The fourteen cases in which the tumor entirely disappeared or became barely perceptible, had an average age of 37.9 years.

In the earnest discussion of the proper method of treating fibroids, which has been going on between electricians and surgeons, many unfair positions have been assumed, and it seems to me that both sides have taken extreme grounds. There are, unquestionably, cases of fibroids which may be satisfactorily treated by electrolysis, and other cases which are fit subjects for the surgeon. There is still another class in which the patient herself, or special circumstances, must decide which mode of treatment shall be adopted. In my opinion, electrolysis may be properly employed, and with expectation of success:

1. In cases of small or moderate-sized tumors.
2. In interstitial growths of any size.
3. For relief of hæmorrhage and pain in any class of tumors.
4. As a means of expediting the climacteric change in any class of cases in which the application is well borne.

Cases should be subject to surgical treatment, either removal of the appendages or hysterectomy:

1. In cases of very large tumors, which have resisted the application of electrolysis for a reasonable length of time, and in which there is an uncontrolled hæmorrhagic tendency. The hard multi-nodular fibroids are most likely to be benefited by this operation.
2. In suppurating tubes, or a seriously diseased condition of the appendages.
3. Hysterectomy is the only remedy in cases of soft œdematous myoma.

I have operated for removal of the appendages in ten or twelve cases of this sort; have performed hysterectomy in six cases, and removed pedunculated, subperitoneal fibroid tumors in four cases. Have had one death, from removal of the appendages, in which case the patient was very low before operation, having pulse of 160. Have had but one death from removal of an enormous, soft œdematous myoma, weighing 40 lbs., in an aged woman. The patient rallied well from the operation, but the tumor had been grown fast to the anterior wall of the abdomen for so long a time that very vascular connections had been established, so that the return flow of blood from the tumor was chiefly through the abdominal wall. After removal of the tumor very extensive, serous oozing occurred, and the patient died twenty-four hours after operation, apparently from serous hæmorrhage. Several quarts of serum were found in the peritoneal cavity at the post-mortem examination.

As regards to the safety of the three methods of treatment proposed—hysterectomy, ovariotomy and electrolysis—it must be conceded that electrolysis is a much less formidable operation than ovariotomy or hysterectomy. To get good results from electrolysis it is necessary to observe the most scrupulous care, not only in the application of the electrical current, but in the after management of the patient.

When gynecologists send patients off to their homes on a street car, in a carriage, or on a railway train, a distance of two to twenty miles, after the application of 100 to 300 milliampères of current, it must not be a matter of surprise that now and then bad results are experienced. It is my custom to send patients to bed for twenty-four hours after each application of the current.

Another cause of failure in the employment of electrolysis, is neglect to use such other means as are known to be serviceable in the management of these cases. I do not think it the duty of the surgeon to neglect to employ for his patient whatever remedy he believes may be beneficial, simply for the purpose of enabling him to differentiate more exactly the results of his therapeutic efforts. I have met a number of cases in which the hæmorrhage, while not readily controlled by electrolysis, speedily yielded when ergot in efficient doses was added, although previously the employment of ergot had been ineffectual. I have employed hydrastis with success in similar cases, and also invariably resort to the use of hot vaginal douching, employing alum and other astringents both with the douche and the tampon.

In hæmorrhage cases, I invariably begin by thorough curetting of the endometrium, which enables me to secure much more marked and immediate results than if the electrolysis alone is employed. I find also that by this means the disposition to increase of hæmorrhage, which is often noticeable at first when electrolysis is employed alone, is wholly avoided.

The hygiene of the patient, and all measures calculated to improve the general health, must receive careful attention.

In the study of the action of the electrical current, I have become more and more satisfied that its chief curative action in these cases is through its cauterizing effect upon the endometrium. The benefit often obtainable in these cases by thorough curetting has long been recognized. Electrolysis accomplishes the same results, not so rapidly, but more efficiently, in that its action penetrates the uterine tissues to a greater or less extent, according to the strength and the duration of the application. In one case a tumor, which reached nearly to the epigastrium, of many years' standing, diminished more than one-half in size within three months as the result of two or three applications of the current. After the third application, in which a current of a little more than 300 milliampères was employed, the patient suffered a severe attack of phlebitis, not only in the tumor, but extending into one limb. For several days the patient was so ill, I despaired of her life. She made a good recovery, however, and is well to-day.

Several other similar experiences, in which the symptoms were not so violent, however, together with the fact that the greatest improvement noticeable is in cases of sub-mucous and interstitial fibroids, have convinced me that the current acts chiefly through its polar, rather than by any subtle interpolar action. Interpolar action of the current must, necessarily, be transitory, whereas, the destruction of tissue produced by the cauterizing action of the positive pole which I use exclusively in the treatment of this class of cases, is something tangible, efficient and permanent in character, as the result of which blood-vessels are plugged by coagulation, and afterwards permanently closed by cicatrization, and thus the nutrition of the morbid growth materially lessened. My constant observation has been that a tumor, to be benefited by electrolysis, must be of such a nature and located in such a manner as to be influenced by an impression upon its vascular supply, such as described.

Dr. H. E. Hayd, of Buffalo, N. Y., read a paper entitled

TWO CASES OF FIBROIDS WHERE ELECTRICITY CEASED TO CONTROL HÆMORRHAGE AFTER A TIME, ALTHOUGH EMINENTLY SATISFACTORY AT FIRST,

Mr. President and Gentlemen:—I propose to report to you two cases, interesting from a clinical therapeutic standpoint; cases in which the manifestations of well directed treatment were at first eminently satisfactory, but finally the symptoms at first so speedily relieved, were by each subsequent treatment dangerously aggravated.

Mrs. L., æt. 49, had two children and six miscarriages. Last pregnancy nine years ago—baby full term—no history of syphilis. Large intra-mural fibroid filling up pelvis, immovable, with a smaller nodule posteriorly and inferiorly obliterating the lumen of the rectum and pushing the vaginal wall downward and forward. Swelling extends three and one half inches above the pubes. Pain and tenderness in iliac region and over pubes upon pressure. Sound entered 4½ inches, curve posteriorly. Tissues firm and resisting to deep pressure upon digital examination, with fulness and swelling in both broad ligaments.

History:—For several years menstrual periods have varied in amount, but for the past two years, and particularly for the last nine months, the flow has been excessive. Attacks of hæmorrhage—continuous—lasting for days and even weeks have occurred from time to time, and on one occasion the patient remained in bed for two months. She used various medicines and had numerous local applications by her physicians, also applied ice in the vagina and over the lower abdominal region. Bowels of late very constipated, in fact, a natural movement has been impossible for months and even an enema brings little or no return. Locomotion much impeded on account of the resulting pains in the left hip and side and extending into the back. Bladder symptoms very annoying and often distressing urgency. I was called to see the patient in January, 1891, and found her in bed, where she had been for eighteen days, flowing considerably, with all the symptoms of anæmia well marked, and the physical prostration very great. An injection of sweet oil and glycerine was given, and subsequently soap and water, and with the aid of the fingers a most prodigious evacuation resulted. A vaginal injection, corrosive sublimate 1-3000, was given, after which, positive intra-uterine galvanism administered 60 ma. for seven minutes. The hæmorrhage was at once controlled. The galvanic application was again made in three days, when it was found that the hæmorrhage had practically ceased. The patient was very sensitive to electricity and complained a good deal, yet not sufficient to make me anticipate any possible complication. These treatments were continued every third day for a month, when the patient was enabled to come to my office. After three months treatment a very appreciable diminution in the size of the tumor had taken place, especially in the smaller mass, which had practically disappeared. The bowels were moving naturally, there was no bladder precipitancy, the pain on locomotion has passed away and the general physical condition excellent, with a gain of twenty-seven pounds. The menses appeared with regularity, the loss was normal in amount. After four months regular bi-weekly treatments, and once a week for another month averaging from 60 to 75 ma. for seven to ten minutes, it was thought that the treatments might be discontinued. To my surprise she returned at once complaining of a little hæmorrhage after the last treatment, and slight pain. Upon examination no tenderness was evident and no reason could be given for this untoward complication. Another positive intra-uterine application was given. Hæmorrhage, but increased in amount, was again complained of. The patient was directed to go home, get to her bed, and then I should try another treatment, but to my surprise, the hæmorrhage was again aggravated and continued quite copiously for three days. What was to be done, and what was responsible for this condition were two questions which were seriously presented to my mind. Was the endometritis, even after such a long course of treatment at fault by means of excessive granulation, if so the os was to be dilated at once and the uterus thoroughly curretted; or did the uterus and ovaries rebel against the irritative influence of the long continued galvanic current and thus keep up the flow. I thought this a possible explanation and forthwith swabbed the womb with Lig. Ferri per chlor., and administered Pot. Brom. grs. xxx with the happy effect of completely arresting all hæmorrhage after a few applications, which satisfactory condition has continued for three months, and, in the meantime, the periods have come with regularity and have caused no trouble.

Bridget M., aged 48, single, seamstress. Intramural fibroid size of orange. Womb movable but restricted by slight adhesions on right side and posteriorly. Tissues soft and relaxed, sound four inches. Patient had been flowing for five weeks and for the last ten days was compelled to take to her bed and use, while in the recumbent position, eight to ten napkins a day. General condition that of extreme weakness with dizziness, headache, palpitation, etc., etc. Positive intra-uterine galvanism, 75 ma., was given for seven minutes. The hæmorrhage had practically ceased at my next visit on the following day. On the third day another application was made, and so on bi-weekly, with the most satisfactory expectations. Patient at once increased in flesh and strength, and in the course of a few weeks came to my office for treatment. The next period came in five weeks and lasted two days—no other menstrual period came for three months, making me anticipate an artificial menopause. The patient showed great tolerance for the electrical current, and complained but very little even with 125 ma., consequently from 100 to 125 ma. were invariably given. All went well, and treatment was discontinued after the fourth month; the womb had reduced one-third in size, and all evidence of trouble at rest. One day while lifting a heavy carpet the patient felt something give way and soon noticed a little blood and presented herself at once for treatment. Positive galvanism 75 ma. with great care was given and like in the previous case, it provoked the bleeding. On the third day the patient returned and another treatment was given and the vagina was thoroughly tamponed with cotton sprinkled with iodoform. The hæmorrhage was aggravated and continued to be provoked after each treatment, until the electricity was abandoned and the womb was thoroughly swabbed with tinct. iodine—Churchill—and immediately the hæmorrhages stopped and it has ceased to be a feature in the case for the past four months. The condition of the patient is excellent.

These two cases are interesting in that they show how quickly dangerous and fatal hæmorrhages were controlled by positive galvanism after many other forms of treatment had been consecutively tried. Moreover they suggest to our minds the possibility of electrical satiety, in which a condition is brought about when, after long and continuous electrical applications, symptoms at first relieved were provoked and aggravated by its subsequent employment. Whether this is done by tearing out reflex muscular contractile parts, or by ceasing to promote a permanent eschar on account of certain degenerative changes in the tissues previously influenced by this agent, or by irritating the ovaries, or even pre-existing adhesions— as suggested by Coe as perhaps a cause of obscure hæmorrhage, is difficult to answer. They are also interesting in that they present a certain condition of tissue, perhaps brought about by electrical stimulation, and decomposition, which permitted simple measures to act favorably when previously they had no salutary influence. Moreover, they impress upon the surgeon's mind the necessity of an expectant treatment, in women at the menopause in life, and a frequent recourse to various medicines, which may at one time fail, but after a certain period, and after the influence of other treatments, be of signal service.

Let me conclude by saying that these two cases are two out of a series of eleven cases of fibrous tumor in which the others were satisfactorily treated by the Apostoli method.

Dr. Goelet: I have had considerable experience with this method, and experience in very severe cases of this character. I feel called upon to answer some of the questions by Dr. Hayd, as put forth in regard to his failure to obtain results in his treatment. I am unable to agree with him that there is such a thing as the patient becoming saturated with electricity. I believe that these failures can be explained.

I have stood by the side of Apostoli, and handed him his electrode until I would get one the size of an orange, when I thought he would not be able to get even a medium-sized one in. You must understand that the cavity of the uterus is much larger than the cervical canal, and for producing a chemical galvano-caustic action upon the endometrium, you must have contact with the whole surface. I do not find fault with Dr. Hayd's technique, but I simply give some of the outlines of the difficulties of treatment, though I suppose he used as large an electrode as possible. I simply desire to show how some difficult cases may be handled.

My plan has been to dilate the cervical canal so that I could get a carbon electrode in the endometrium which would be in contact with the whole surface. Another point is, that in almost all these cases of fibroid we have endometritis, and this means an increase of the catarrhal discharge. I think that this offers a protection to the uterus which prevents the action upon the diseased surface, and this you must get rid of, and dilatation itself to a certain extent does so, as it permits it to drain, but not in every instance, and I have sometimes turned on the negative current to dissolve the secretions, so that I would be able to make better contact with the diseased surface. In sensitive patients you must not use too strong doses, and I do not think 75 milliampères sufficient to start hæmorrhage. I administer a mild anæsthetic, usually chloroform, for a few minutes. I do not think it wise to continue the application of electricity too long, and if you apply electricity in three sections of three minutes each, or nine minutes altogether, and by giving a mild anæsthetic, you can use 250 to 300 milliampères, and you must push the agent, and you will succeed, and not fail.

I call to mind one very serious case of hæmorrhage similar to that of Dr. Hayd; it was very persistent, and 100 milliampères would not control it. I used 150 milliampères, and I finally controlled it, and the patient's menstruation has been normal ever since.

I think that dilating the cervix first, so as to allow the passage of a sufficiently large electrode, is necessary. I suppose you all know what a sectional electrode is. It is a carbon bar which takes in one inch of surface at a time. Another point: I believe, in some cases, we should curette the cavity first. If you curette, so that the electrode can come in contact with a diseased surface, and get an eschar, you can control hæmorrhage. In intramural fibroids, you do not know how much is in the uterus, and you do not know whether you get the sound through to the fundus or not. If you fail to come in contact with any portion of the canal, you leave that part to bleed.

Dr. Bigelow: I do not know that I have ever seen a tumor, a bleeding myoma, which did not yield to the current. I have seen some very bad cases which persisted after several applications, and in most of these cases the cervical canal is pretty well dilated, and then, too, the electrodes themselves may serve as dilators. I show you a set of Apostoli's points, made by Flemming, and you can get them in gradually. Sometimes the whole endometrium seems to be embraced, and yet the bleeding proceeds, and I think these

When gynecologists send patients off to their homes on a street car, in a carriage, or on a railway train, a distance of two to twenty miles, after the application of 100 to 300 milliampères of current, it must not be a matter of surprise that now and then bad results are experienced. It is my custom to send patients to bed for twenty-four hours after each application of the current.

Another cause of failure in the employment of electrolysis, is neglect to use such other means as are known to be serviceable in the management of these cases. I do not think it the duty of the surgeon to neglect to employ for his patient whatever remedy he believes may be beneficial, simply for the purpose of enabling him to differentiate more exactly the results of his therapeutic efforts. I have met a number of cases in which the hæmorrhage, while not readily controlled by electrolysis, speedily yielded when ergot in efficient doses was added, although previously the employment of ergot had been ineffectual. I have employed hydrastis with success in similar cases, and also invariably resort to the use of hot vaginal douching, employing alum and other astringents both with the douche and the tampon.

In hæmorrhage cases, I invariably begin by thorough curetting of the endometrium, which enables me to secure much more marked and immediate results than if the electrolysis alone is employed. I find also that by this means the disposition to increase of hæmorrhage, which is often noticeable at first when electrolysis is employed alone, is wholly avoided.

The hygiene of the patient, and all measures calculated to improve the general health, must receive careful attention.

In the study of the action of the electrical current, I have become more and more satisfied that its chief curative action in these cases is through its cauterizing effect upon the endometrium. The benefit often obtainable in these cases by thorough curetting has long been recognized. Electrolysis accomplishes the same results, not so rapidly, but more efficiently, in that its action penetrates the uterine tissues to a greater or less extent, according to the strength and the duration of the application. In one case a tumor, which reached nearly to the epigastrium, of many years' standing, diminished more than one-half in size within three months as the result of two or three applications of the current. After the third application, in which a current of a little more than 300 milliampères was employed, the patient suffered a severe attack of phlebitis, not only in the tumor, but extending into one limb. For several days the patient was so ill, I despaired of her life. She made a good recovery, however, and is well to-day.

Several other similar experiences, in which the symptoms were not so violent, however, together with the fact that the greatest improvement noticeable is in cases of sub-mucous and interstitial fibroids, have convinced me that the current acts chiefly through its polar, rather than by any subtle interpolar action. Interpolar action of the current must, necessarily, be transitory, whereas, the destruction of tissue produced by the cauterizing action of the positive pole which I use exclusively in the treatment of this class of cases, is something tangible, efficient and permanent in character, as the result of which blood-vessels are plugged by coagulation, and afterwards permanently closed by cicatrization, and thus the nutrition of the morbid growth materially lessened. My constant observation has been that a tumor, to be benefited by electrolysis, must be of such a nature and located in such a manner as to be influenced by an impression upon its vascular supply, such as described.

Dr. H. E. Hayd, of Buffalo, N. Y., read a paper entitled

TWO CASES OF FIBROIDS WHERE ELECTRICITY CEASED TO CONTROL HÆMORRHAGE AFTER A TIME, ALTHOUGH EMINENTLY SATISFACTORY AT FIRST,

Mr. President and Gentlemen:—I propose to report to you two cases, interesting from a clinical therapeutic standpoint; cases in which the manifestations of well directed treatment were at first eminently satisfactory, but finally the symptoms at first so speedily relieved, were by each subsequent treatment dangerously aggravated.

Mrs. L., æt. 49, had two children and six miscarriages. Last pregnancy nine years ago—baby full term—no history of syphilis. Large intra-mural fibroid filling up pelvis, immovable, with a smaller nodule posteriorly and inferiorly obliterating the lumen of the rectum and pushing the vaginal wall downward and forward. Swelling extends three and one half inches above the pubes. Pain and tenderness in iliac region and over pubes upon pressure. Sound entered 4½ inches, curve posteriorly. Tissues firm and resisting to deep pressure upon digital examination, with fulness and swelling in both broad ligaments.

History:—For several years menstrual periods have varied in amount, but for the past two years, and particularly for the last nine months, the flow has been excessive. Attacks of hæmorrhage—continuous—lasting for days and even weeks have occurred from time to time, and on one occasion the patient remained in bed for two months. She used various medicines and had numerous local applications by her physicians, also applied ice in the vagina and over the lower abdominal region. Bowels of late very constipated, in fact, a natural movement has been impossible for months and even an enema brings little or no return. Locomotion much impeded on account of the resulting pains in the left hip and side and extending into the back. Bladder symptoms very annoying and often distressing urgency. I was called to see the patient in January, 1891, and found her in bed, where she had been for eighteen days, flowing considerably, with all the symptoms of anæmia well marked, and the physical prostration very great. An injection of sweet oil and glycerine was given, and subsequently soap and water, and with the aid of the fingers a most prodigious evacuation resulted. A vaginal injection, corrosive sublimate 1-3000, was given, after which, positive intra-uterine galvanism administered 60 ma. for seven minutes. The hæmorrhage was at once controlled. The galvanic application was again made in three days, when it was found that the hæmorrhage had practically ceased. The patient was very sensitive to electricity and complained a good deal, yet not sufficient to make me anticipate any possible complication. These treatments were continued every third day for a month, when the patient was enabled to come to my office. After three months treatment a very appreciable diminution in the size of the tumor had taken place, especially in the smaller mass, which had practically disappeared. The bowels were moving naturally, there was no bladder precipitancy, the pain on locomotion has passed away and the general physical condition excellent, with a gain of twenty-seven pounds. The menses appeared with regularity, the loss was normal in amount. After four months regular bi-weekly treatments, and once a week for another month averaging from 60 to 75 ma. for seven to ten minutes, it was thought that the treatments might be discontinued. To my surprise she returned at once complaining of a little hæmorrhage after the last treatment, and slight pain. Upon examination no tenderness was evident and no reason could be given for this untoward complication. Another positive intra-uterine application was given. Hæmorrhage, but increased in amount, was again complained of. The patient was directed to go home, get to her bed, and then I should try another treatment, but to my surprise, the hæmorrhage was again aggravated and continued quite copiously for three days. What was to be done, and what was responsible for this condition, were two questions which were seriously presented to my mind. Was the endometritis, even after such a long course of treatment at fault by means of excessive granulation, if so the os was to be dilated at once and the uterus thoroughly curetted; or did the uterus and ovaries rebel against the irritative influence of the long continued galvanic current and thus keep up the flow. I thought this a possible explanation and forthwith swabbed the womb with Liq. Ferri per chlor., and administered Pot. Brom. grs. xxx with the happy effect of completely arresting all hæmorrhage after a few applications, which satisfactory condition has continued for three months, and, in the meantime, the periods have come with regularity and have caused no trouble.

Bridget M., aged 48, single, seamstress. Intramural fibroid size of orange. Womb movable but restricted by slight adhesions on right side and posteriorly. Tissues soft and relaxed. sound four inches. Patient had been flowing for five weeks and for the last ten days was compelled to take to her bed and use, while in the recumbent position, eight to ten napkins a day. General condition that of extreme weakness with dizziness, headache, palpitation, etc., etc. Positive intra-uterine galvanism, 75 ma., was given for seven minutes. The hæmorrhage had practically ceased at my next visit on the following day. On the third day another application was made, and so on bi-weekly, with the most satisfactory expectations. Patient at once increased in flesh and strength, and in the course of a few weeks came to my office for treatment. The next period came in five weeks and lasted two days—no other menstrual period came for three months, making me anticipate an artificial menopause. The patient showed great tolerance for the electrical current, and complained but very little even with 125 ma., consequently from 100 to 125 ma. were invariably given. All went well, and treatment was discontinued after the fourth month; the womb had reduced one-third in size, and all evidence of trouble at rest. One day while lifting a heavy carpet the patient felt something give way and soon noticed a little blood and presented herself at once for treatment. Positive galvanism 75 ma. with great care was given and like in the previous case, it provoked the bleeding. On the third day the patient returned and another treatment was given and the vagina was thoroughly tamponed with cotton sprinkled with iodoform. The hæmorrhage was aggravated and continued to be provoked after each treatment, until the electricity was abandoned and the womb was thoroughly swabbed with *tinct. iodine—Churchill*—and immediately the hæmorrhages stopped and it has ceased to be a feature in the case for the past four months. The condition of the patient is excellent.

These two cases are interesting in that they show how quickly dangerous and fatal hæmorrhages were controlled by positive galvanism after many other forms of treatment had been consecutively tried. Moreover they suggest to our minds the possibility of electrical satiety, in which a condition is brought about when, after long and continuous electrical applications, symptoms at first relieved were provoked and aggravated by its subsequent employment. Whether this is done by tearing out reflex muscular contractile parts, or by ceasing to promote a permanent eschar on account of certain degenerative changes in the tissues previously influenced by this agent, or by irritating the ovaries, or even pre-existing adhesions— as suggested by Coe as perhaps a cause of obscure hæmorrhage, is difficult to answer. They are also interesting in that they present a certain condition of tissue, perhaps brought about by electrical stimulation, and decomposition, which permitted simple measures to act favorably when previously they had no salutary influence. Moreover, they impress upon the surgeon's mind the necessity of an expectant treatment, in women at the menopause in life, and a frequent recourse to various medicines, which may at one time fail, but after a certain period, and after the influence of other treatments, be of signal service.

Let me conclude by saying that these two cases are two out of a series of eleven cases of fibrous tumor in which the others were satisfactorily treated by the Apostoli method.

Dr. Goelet: I have had considerable experience with this method, and experience in very severe cases of this character. I feel called upon to answer some of the questions by Dr. Hayd, as put forth in regard to his failure to obtain results in his treatment. I am unable to agree with him that there is such a thing as the patient becoming saturated with electricity. I believe that these failures can be explained.

I have stood by the side of Apostoli, and handed him his electrode until I would get one the size of an orange, when I thought he would not be able to get even a medium-sized one in. You must understand that the cavity of the uterus is much larger than the cervical canal, and for producing a chemical galvano-caustic action upon the endometrium, you must have contact with the whole surface. I do not find fault with Dr. Hayd's technique, but I simply give some of the outlines of the difficulties of treatment, though I suppose he used as large an electrode as possible. I simply desire to show how some difficult cases may be handled.

My plan has been to dilate the cervical canal so that I could get a carbon electrode in the endometrium which would be in contact with the whole surface. Another point is, that in almost all these cases of fibroid we have endometritis, and this means an increase of the catarrhal discharge. I think that this offers a protection to the uterus which prevents the action upon the diseased surface, and this you must get rid of, and dilatation itself to a certain extent does so, as it permits it to drain, but not in every instance, and I have sometimes turned on the negative current to dissolve the secretions, so that I would be able to make better contact with the diseased surface. In sensitive patients you must not use too strong doses, and I do not think 75 milliampères sufficient to start hæmorrhage. I administer a mild anæsthetic, usually chloroform, for a few minutes. I do not think it wise to continue the application of electricity too long, and if you apply electricity in three sections of three minutes each, or nine minutes altogether, and by giving a mild anæsthetic, you can use 250 to 300 milliampères, and you must push the agent, and you will succeed, and not fail.

I call to mind one very serious case of hæmorrhage similar to that of Dr. Hayd; it was very persistent, and 100 milliampères would not control it. I used 150 milliampères, and I finally controlled it, and the patient's menstruation has been normal ever since.

I think that dilating the cervix first, so as to allow the passage of a sufficiently large electrode, is necessary. I suppose you all know what a sectional electrode is. It is a carbon bar which takes in one inch of surface at a time. Another point: I believe, in some cases, we should curette the cavity first. If you curette, so that the electrode can come in contact with a diseased surface, and get an eschar, you can control hæmorrhage. In intramural fibroids, you do not know how much is in the uterus, and you do not know whether you get the sound through to the fundus or not. If you fail to come in contact with any portion of the canal, you leave that part to bleed.

Dr. Bigelow: I do not know that I have ever seen a tumor, a bleeding myoma, which did not yield to the current. I have seen some very bad cases which persisted after several applications, and in most of these cases the cervical canal is pretty well dilated, and then, too, the electrodes themselves may serve as dilators. I show you a set of Apostoli's points, made by Flemming, and you can get them in gradually. Sometimes the whole endometrium seems to be embraced, and yet the bleeding proceeds, and I think these cases are either in tumors where they have a very active and superficial blood supply, or where they are too dense. In those cases, I saw Apostoli commence with an enormous negative current. I think Dr. Goelet is very proper in commencing with the negative current, and I remember a case of Apostoli, in which he applied 125 milliampères, negative, and she came, again and he again applied it, and then applied the positive, and it stopped. If the bleeding resists both the negative and positive current, I think I should puncture immediately. In this case, finally, the size of the tumor was reduced very much, it was finally punctured, and they did her a great deal of good. In a persistent bleeding that does not yield to the positive or negative current, I should puncture.

Dr. Walling: I have a letter from a correspondent who sends this curette, made of a loop of platinum wire, which he uses attached to the positive pole of a galvanic current during the operation of curetting. He claims that both applications can thus be performed simultaneously.

Dr. Goelet: I have had gynecologists say to me that it is impossible to control uterine hæmorrhage with electricity, and they have told me that they were sure that they were making the applications correctly, and that they touched all parts of the uterus and moved it over the entire surface. The trouble was that they did not keep it long enough in one place to produce cauterization.

Dr. Morton: I have but little experience in gynecological practice, not sufficient to speak with authority; but as to the question of the operative procedures, I have done enough to get an idea or two, especially as to general ideas of polar action, which are equally applicable to gynecological as to other operations. What holds true once will again. The same query put in the case of cancer may properly be put to the gynecologist: How much of this action is due to the chemical products of the positive pole, and how much is due to the galvanic action pure and simple? I would not ask the question except that I hold it is correct to use the curette. I put the question this way: Have the gynecologists not known hæmorrhage to be arrested by the application of the clay ball electrode? I have twice in six weeks, while on my country vacation, used it. A lady whom I had known in the city came to me with a long history of successive menorrhagical attacks, and begged to have electricity applied. I did not want to go into business on my vacation, nor did I want to begin intra-uterine treatment, which I do not feel competent to make, as my special treatment is percutaneous; however, I sent to New York and ordered a thirty-celled battery and clay ball electrode. I made an intra-vaginal application of the electrode, with happy effect. Not only did the hæmorrhage cease, but a large growth in the left groin, which had been pronounced by an expert to be a fibroid tumor, diminished in size, and in three weeks the lady was well enough to drive about and walk and pursue her daily vocations. Whether it was a fibroid or not, I don't know; I don't think it was, however, but it was a very hard tumor. I do not care to go into the question of fibroids now, but by simply calling attention to the case I wish to ask whether there may not be something due to the galvanic effects, pure and simple, as well as to the chemical effects, which are practically surgical effects. If we get good results from our applications, and hæmorrhage can be arrested by the galvanic effect without the chemical, then the gentleman who used the galvanic curette may be correct, and I ask the gynecological gentlemen if they won't clear up the question a little more. I used 50 milliamperes in my case.

Dr. Nunn: It has occurred to me to ask two or three questions in this connection. Of course, all of us who have much gynecological practice must have used, if we keep up with the times, galvanic treatment one way or another, and there must be a difference between the individual and the opinions of each one who brings a certain amount of personal experience. While I do not claim the immense experience of the metropolis, I can claim something as a country practitioner. The question that occurs to me is this: Were the indications for the constant application of the positive pole? The gentleman said he applied the positive pole three times in succession. That is contrary to my practice. I simply want an explanation why.

I first use the positive to arrest the flow, after that I use the percutaneous method, applying the negative. But I do not see the scientific necessity for cauterization after the cessation of the hæmorrhage. Every time you cauterize, you make an eschar deeper and deeper, and after a while the eschar comes off and you have the hæmorrhage, so that after the hæmorrhage has ceased I do not use the current again.

Dr. Cleaves: I only want to say in connection with what Dr. Morton has said, that during the past winter I had a case of fibroid tumor in which there was irregular and profuse menstruation, not a hæmorrhage, and that that menstruation has been controlled by the percutaneous use of the current.

In the Post-Graduate clinic I have controlled metrorrhagia where the patient had more or less irregular menstruation and who, after two intra-vaginal treatments of the static electricity, which was given simply because it was not convenient to give the galvanic treatment, became regular. The first menstruation after the first application was at the end of three weeks and the next four, and the next four weeks, and that is all that has been done. In the case of a fibroid there has been no return and all the results have been obtained by the percutaneous use of the galvanic current.

Dr. Morton: Before the gentleman who read the paper concludes I would like to put in one more physiological point, and this in reference to the negative pole. At the Owens College, at Manchester, where there are many opportunities for experiment, the electrode was introduced into the uterus of a rabbit, the negative pole producing a profuse flow of fluid from the uterus, and by reversing, the flow ceased. And as often as this experiment was repeated with the negative pole there was a profuse flow, and the effect was explained by the gentleman who made the experiment as one of cataphoresis; that is, the fluids pass from the anode to the cathode and the passage is something like osmosis although there is no membrane between, and in summing up on the use of these two poles I think it is important that it should be kept in view that this phenomenon occurs. To obtain the full effects of cataphoresis in the treatment of disease, in other words, to accummulate liquids at the negative pole, it is necessary to continue the treatment for some time. Cataphoresis won't happen at once, but requires twenty or thirty minutes, and the liquids will gradually collect at the negative pole. I think it is a physical effect which we cannot afford to overlook, and one which gynecologists should bear in mind in the explanation of the application of one pole or the other.

Dr. Massey: This is an exceedingly interesting question. Dr. Hayd has well reported the cases, and I think we cannot discuss them too minutely. I have often been struck with the ready belief of the surgeon who did not use electricity, in its hæmostatic value, knowing as I did that the immediate effect of nearly all the treatments is to cause more or less slight hæmorrhage. The large carbon electrodes, if they can be inserted, are less liable to cause hæmorrhage than the smaller electrodes and I think that this fact is partly a key to the doctor's difficulty in these cases. A point not brought out in the discussion and one which I consider very important, is the fact of too frequent treatments. I certainly think that the uterus should not be invaded by an electrode or anything else that causes the amount of local disturbance that it does oftener than every five days at the very most, and at times the intervals should be seven days.

Dr. Goelet is also correct in insisting upon the value of thoroughness in application; in other words, when we make an application, make it thoroughly and then wait until that application has had proper time to act. We should not forget that there are two actions from electricity in causing the arrest of hæmorrhage: one, the constringent effect upon the uterine tissue, and this is the only action we get unless we use the destructive currents. The other, is the destruction or cauterization of the mucous membrane followed by cicatrization.

I think Dr. Hayd is correct in saying that he got good effects from his previous electrical treatment though he used other treatment later on. I would therefore emphasize the necessity for rest and rational treatment during the time of intra-uterine applications of electricity. If you have a case from the country or from a distance in a hurry to get well and get home, you have other electrical means to hasten the cure of that case. We have the galvanic alternative vaginal treatments which can be applied, as well as vaginal treatments with the most powerful faradic currents; such currents I am sure help to control hæmorrhage. Then we have percutaneous treatments which have a certain value. These remarks I think also reply partly to Dr. Morton's question as to the galvanic effects. The galvanic effect in controlling uterine hæmorrhage simply causes the organ worked upon to partly contract and if we carry sufficient current we can contract it, even a myoma.

As to the curette shown, although we would not use it a great deal, it seems to me that the association of a galvano-positive action with the curetting with a platinum curette, would be of value in lessening the hæmorrhage at the time of operation.

Dr. Hahn, of Youngstown, O.: There is one cause of failure presented by Dr. Goelet which I think I had a case which will verify. That was where all the parts of the endometrium were not brought in contact with the electrode. A year ago I treated a patient of that kind in whom the hæmorrhages were very great, but certainly yielded after months of treatment. At that time the electrode entered the uterus about 3½ inches, and after a number of months, as I say, the menses were normal, and continued so for about four months, at which time there was a decided aggravation. After recommencing the treatment a second time, and several treatments having been given, the electrode taking the same position as formerly, excepting at one séance, my electrode found a new field, in which it entered 4½ inches. After this new pocket was found, and a second application had been made, we effectually arrested the hæmorrhage. At any rate, following these two sittings there was an arrest of hæmorrhage for seven weeks, and at the next turn the menses were perfectly normal, and a period of four weeks has passed again. I think I would have had better results had I reached that field before.

Dr. Redding, of Philadelphia: In my experience, these hæmorrhages are due to a too frequent application of the current.

I remember a case of large fibroid extending above the umbilicus, and in which menstruation, both in quantity and duration, was very profuse. I treated this case two or three times a week for three months, with recurring menstruation every two weeks and lasting seven to ten days, and quite profuse every day. I believe this was due to my too frequent applications, as after discontinuing them and applying once a week, they did not occur again. I also remember a case of hæmorrhage which I treated with a positive intra-uterine electrode two or three times a week, even after the stoppage of the hæmorrhage, in which there was a recurrence of the hæmorrhage, and upon stopping the frequent applications, and substituting the use of the negative pole instead of the positive in my intra-uterine applications, I had no further trouble.

Dr. Hayd: I am very much obliged to you for the respectful discussion you have given my paper, and the thought which it has elicited.

If I do not succeed in answering each of you, I hope any gentleman here will not hesitate to rise and ask any question he may desire.

I am not yet satisfied, from the discussion and from my own study of these cases, as to the cause of the hæmorrhage, as to why it was controlled in the first instance and not later; and so long as doubt exists in our mind as to the source of the hæmorrhage, so long there will be many remedies and many applications to control it.

In these cases I am satisfied that the applications were carefully made.

When first called to these patients, the cervix was well dilated, the tissues were soft and relaxed, and there was no difficulty whatever in introducing the electrode; and moreover, I succeeded at once in controlling the hæmorrhage. Now whether the hæmorrhage was due at first to associated endometritis, or to a relaxed condition of the parts, or whether both entered into the causation, I am not prepared to say. At all events, I relieved them. But later on the hæmorrhages recurred and continued, notwithstanding the fact that there had been sufficient applications made. I invariably introduced the sound and dilated the cervix, so that the electrode could be introduced, a large carbon-pointed electrode, with facility and ease, as I am satisfied that one of the most important points in controlling hæmorrhage is to get in as large an electrode as easily and as free from irritation as is possible.

I am satisfied that by having the cervical canal well dilated we encourage drainage and that we do more, we relieve the colic which patients suffer from after treatment by permitting the escape of gases and the accumulation of fluids which are present and which bring on irritation and keep up hæmorrhage. I think it is possible that hæmorrhages are kept up and sometimes caused by abrasions of the uterine canal which cannot be reached by any electrode, no matter how it is dilated. I think it is possible to irritate the ovaries and keep up hæmorrhage in that way, as we often see in metrorrhagia relieved by bromide of potassium. I also believe that it is possible by the simple introduction of a sound to re-excite and irritate adhesions around the uterus as was suggested by Coe in a paper I read in the *Medical Record.*

As the uterine cavity is triangular I think it is possible we do not touch all the lateral angles and that we irritate by the electrodes.

I did not need the chemical effect, I simply wanted the astringent.

As much as I appreciate Dr. Goelet's remarks on the care necessary in the insertion of the electrode, I do not believe that that was the fault in these cases, and I do believe and I am of the opinion that had I not succeeded in resisting the hæmorrhage I should have been satisfied with the intra-vaginal treatment.

I believe that electricity possesses the power, not only by reason of its local chemical effect, but that it exercises its influence in other ways, that it stimulates nerve power and muscle contraction and general nutrition of the tissues with which it comes in contact. If it was not for something more than the chemical action, how do you explain those cases of

Dr. Newman which were cured, and why is not cancer relieved by caustics, as arsenic and other applications. I cannot but believe that there is more than the simple chemical effect.

But as I say, the hæmorrhages continued in these cases and I should have continued with the percutaneous method, and I think I should have accomplished a great deal, but as it was, it was evident that an astringent was required.

As to the cause of the hæmorrhage, whether it was due to the bursting of a vien by reason of the electrode, or whether it was caused by reason of our not be-able to touch the surface thoroughly on account of the accumulation of mucus I do not know, but I do not believe it. I think there are certain abrasions of the uterine cavity which cannot be touched by the electrode and that the electrical element is not sufficient to control hæmorrhage in that particular case which probably requires the chemical as well.

As to electric puncture, I would probably have tried it had I thought it necessary. I do not need to make any reference to that; that has been already answered.

There is no sense in using electricity if you paw over the surface of the uterus with a scoop.

I think it is possible to continue treatment too long. The first question I was asked was, why is the treatment continued so long? I did so because the tumor decreased in size, and I discontinued on account of the patient stopping the treatment, but the woman lifted a heavy carpet, and whether she tore a blood vessel or not I am unable to say, yet notwithstanding the greatest care was exercised in the application of electricity it ceased to be of any benefit whatever in controlling the hæmorrhage a second time.

There is no question as to the correctness of the remarks made by Drs. Cleaves and Morton. I believe that many cases of hæmorrhage are stopped by the clay electrode, and the more I use it the more I am satisfied that we cause the absorption of adhesions and irritative tissues to be removed, and that we direct our electric force in the nutrition of that womb to such an extent as to interfere with the continued growth and development of a tumor, as well as to control the hæmorrhages.

A question which often presents itself to my mind, and one which I consider of great importance, is, that we should do as little intra-uterine medication as possible. The more you can impress yourselves that it is the endometrium at fault, then make your intra-uterine applications; but unfortunately many cases treated by the sound have no reason whatever. I reported a paper in the *New York Medical Record*, in which I cited a number of cases where I controlled hæmorrhage without the intra-uterine method at all.

Another point I tried to bring out in my paper, and I wish to state that my ambitions are not surgical, and that I took up the study of electricity so that I would not have to resort to any more surgery than possible, and knowing the power of electricity the more I am satisfied we should be more conservative in the treatment of these cases. For at the most the symptom will only exist for a few years irrespective of treatment or operation, and will need no treatment from you or anybody else aside from the anxiety to themselves, and the cases I have mentioned thoroughly demonstrate that.

G. Betton Massey, M. D., of Philadelphia, President of the American Electro-therapeutic Association, Instructor in Electro-gynecology in the Philadelphia Polyclinic, etc., read a paper entitled

ELECTRO-PUNCTURE; ITS MOST USEFUL MODIFICATIONS, AND ITS VALUE IN THE TREATMENT OF FIBROID TUMORS.

The method of inducing atrophy of myo-fibromata of the uterus by currents from electrodes introduced into their substance by puncture deserves separate consideration from other related methods for several reasons, chief of which i the fact that it is essentially a bolder and more radical prc cedure than the other electrical methods of dealing wit these growths. Gynecologists who use electricity are greatl divided as to its value and freedom from risk, some rejectin it altogether, and others considering it the only metho worthy of use. My own position in the matter has been represented as that of warm advocacy of puncture; a statement that was a surprise to me at the time, although I have recently had reason to look on the procedure with increasing favor under certain conditions and circumstances.

There is no doubt that this method presents itself with much favor to the beginner in the treatment of fibroid tumors, and I think this is often because tyros have the false impression that electricity acts in these growths by dissolving them. No error could be greater, and it is a mistake that is apt to lead to harmful work in the direction of over-treatment. It is true that we do not know the mode in which it does act, but my observation has convinced me that the period between the treatments is an essential part of the treatment itself, to be carefully arranged with each case, and that results are not proportionate to current strength alone. These two facts, when taken together, certainly indicate that electricity does not accomplish the reduction and dissipation of fibroid tumors by electrolysis pure and simple, for this is a chemical disintegration depending in extent only on the number of millicoulombs used. By an increase in the current it would be possible to dissolve the tumor at once and at one application if this were the method of its action. In the cases under my observation in which the tumors have disappeared no such currents were used. The current strength was frequently smaller than that used in tumors that did not disappear. However we may explain it, it is certain that the absorbents bear an important relation to a shrinking fibroid after each electrical seance, and that mere electrolysis is but a part of the work, and a part that may be inferior to a more subtle interference with tissue integrity and metamorphosis.

From experience I am not disposed to think that puncture presents necessarily any advantages over intra-uterine applications where either method is feasible. In certai cases apparently well adapted to both methods, I have served that it is better, but this seemed to be due to irri tive conditions of the appendages that hindered or nullifi the good effects of the intra-uterine applications. In suc cases the punctures were much better borne and produc no reaction.

Speaking of vaginal puncture alone, and premising that should never be performed unless a portion of the tumor c be reached directly through the posterior vault, it may said of it that the spot punctured is accessible and may kept under rigid antisepsis, which is a distinct advantage ov the prolonged application of a strong current to a restri spot within the uterus. Having said as much, I may turn some remarks on how I think vaginal puncture should done.

From the beginning I have urged that the trocar sl be insulated through the healthy tissue in order that latter may heal at once. This may be called *buried pun* Not wishing to make a patulous opening or to have a j ble slough at the point of application, both of which I lieve are liable to happen with the positive pole, my pu tures have been almost invariably negative. To meet indications I have recently modified the specially insul trocar formerly employed, and now use one of steel, c ing certain features of my own and of Apostoli's latest tern. The one exhibited to you has, as you see, the sh now employed, I believe, by Apostoli to prevent the in ment being inserted beyond one-half centimeter, but in case the shoulder is one and a half centimeters from the point, permitting a possible insertion to the latter depth. The first half from the point only is exposed for the electrical action, the remaining centimeter being covered by hard rubber which is flush with the needle point, the diameter of the needle here having been lessened. The rubber insulation is vulcanized on the shaft, and presents a continuous insulation from the point to the attachment socket at the posterior end. This has been the most satisfactory instrument so far used by me, being strong and stiff, free from impedimental handles and sheathes, and incapable of being inserted deeper than intended. It can be made aseptic by boiling, and I have even employed the spirit flame when prepared to remedy any damage it might cause to the insulation.

As I said before, buried vaginal puncture will reduce fibroids and remove pain when the intra-uterine method is not tolerated.

I have, moreover, never had a mishap or bad effect from its use, and have had pain following it on but one occasion, which was possibly due to a dispensary patient walking some distance home within an hour after the puncture. This freedom from mishaps I nevertheless attribute almost entirely to a careful selection of cases, as I can conceive that the procedure would risk injury to important organs if employed in any case other than those in which the tumor is accessible by virtue of a practical protusion into the posterior vaginal vault.

There is another form of buried puncture to which I wish to direct your attention particularly. I allude to insulated puncture through the abdominal wall. Abdominal electro-puncture has been condemned by myself, in unison with recent workers in electro-gynecology, but the thought occurred to me some months ago that my condemnation was of that unwise kind that precedes a trial, and that the bad results reported in the past occurred in the pre-aseptic days. There are certain abdominal tumors of large bulk that are so far removed from the pelvic end of the cervix and vicinity of the vagina as to make intra-uterine treatment difficult, tedious and painful, and vaginal puncture impossible. These tumors are beneath our hands externally, with nothing between us but a layer of fat and muscle and two layers of peritoneum. As contrasted with the pelvic route, puncture from this direction is free from the embarrassing neighborhood of important organs, is direct and exact, and possesses the one disadvantage of being intra-peritoneal. Experience in two cases, which have been punctured on several occasions, has convinced me that the peritoneal bugbear is overdrawn, at least when aseptic precautions are observed. Peritonitis and its effect, adhesion, can only follow the introduction of septic material, or a possible necrosis from a too strong positive puncture.

The details of the procedure as advised by me are as follows: The punctures being invariably negative small steel needles are used, three at each puncture, attached by branched wires to a single pliant copper wire as a conducting cord. No. 22 or 24 insulated wire is much more convenient than an ordinary conducting cord. For the puncture needles there can be no better form devised than the straight Hagedorn surgical needle found in every instrument shop. These needles possess the advantage of great ease of penetration combined with lightness and strength, and the slit made by them admits the increased bulk of the covering without hitch. This slit form of puncture also heals easily without a scar. The needle should be about 2½ inches long, the first half inch from the point being left bare, and the portion above covered by hard rubber vulcanized on the shank as thinly as consistent with good insulation. It is easily attached to the copper wire by the latter being passed through the eye and wound around the shank—by simple threading in other words, or the needles may be permanently soldered to cord tips as suggested by Dr. Walling.

These needles, properly insulated, sterilized and attached to the negative pole of the battery by the branched wire, are easily and painlessly thrust into the tumor through the skin, the surface having been thoroughly asepticized previously by the most approved method, and chilled by rhigolene just before the insertion of the needle. The current strength has varied in my punctures between 60 and 100 ma., and the duration from six to eight minutes. After removal of the needles the minute spots made are sealed with a little borated cotton and plaster, or by the direct application of collodion.

As to frequency, it is probably best to allow at least two or three weeks to elapse between each application of electricity in this manner, although this depends on the size of the tumor and the field of tumor-surface accessible to the method. It need scarcely be said that no punctures should be made at any spot that might be covered with intestinal convolutions.

The immediate inconveniences that follow these punctures, such as tenderness and pain, are generally less than those following an intra-uterine application. One patient under this treatment was kept in bed in the Sanatorium for twenty-four hours after each puncture as a measure of precaution, but another was punctured at the Dispensary for Women and walked home shortly afterward on each occasion.

In neither of these cases has sufficient time yet elapsed to permit a full determination of results, but in each case there has been a marked decrease in size, and in one case a lessening of the pain that rendered the patient helpless. There has not been an unfavorable incident of any kind, and the absence of adhesions between the tumors and the abdominal walls is easily proven. The result, in my opinion, is to open anew the question of the propriety of employing buried abdominal electro-puncture in the treatment of those large fibroid tumors, both intra-mural and sub-peritoneal, that lie above the pelvic brim.

Dr. Bigelow: I appreciate my privilege very much in discussing this paper. He has been doing very much of this, and with very great care. Dr. Massey's work has been done in a scientific and modest way, with a great deal of acumen, and he has done almost all the punctures made in our dispensary. He is much more original than I am, so that almost all these punctures were made by him, and on his own responsibility, and the majority of the results were good. In his private practice he is getting results much better than in the dispensary.

As to intra-uterine applications of the current I can conceive by the contiguity of structure that you can reduce tumors. In sub-peritoneal you must puncture, as you cannot get at it by contiguity of structure. If you use mild intra-uterine currents at all events, you will relieve the patient of all the magnetic fears beforehand, and in the second place she has confidence in you, confidence in the method, and the influence of the mind in these cases is not inconsiderable, and you cure the endometritis which is nearly always co-existent with the tumor. It has been our practice at the clinic to precede these treatments by intra-uterine positive galvanic applications, and then followed by the puncture. Sufficient time has not elapsed to give judgment upon the cases of electro-puncture through the abdominal walls. It is possible that the case at the dispensary has been reduced; it has changed its form, but I do not think it has diminished very much. The tumor is more dome-like than it was. I believe that it is a good thing, and shows how it can help the surgeon in bringing it nearer the surface. The abdominal walls are so thin that puncture can

Dr. Newman which were cured, and why is not cancer relieved by caustics, as arsenic and other applications. I cannot but believe that there is more than the simple chemical effect.

But as I say, the hæmorrhages continued in these cases and I should have continued with the percutaneous method, and I think I should have accomplished a great deal, but as it was, it was evident that an astringent was required.

As to the cause of the hæmorrhage, whether it was due to the bursting of a vien by reason of the electrode, or whether it was caused by reason of our not be·able to touch the surface thoroughly on account of the accumulation of mucus I do not know, but I do not believe it. I think there are certain abrasions of the uterine cavity which cannot be touched by the electrode and that the electrical element is not sufficient to control hæmorrhage in that particular case which probably requires the chemical as well.

As to electric puncture, I would probably have tried it had I thought it necessary. I do not need to make any reference to that; that has been already answered.

There is no sense in using electricity if you paw over the surface of the uterus with a scoop.

I think it is possible to continue treatment too long. The first question I was asked was, why is the treatment continued so long? I did so because the tumor decreased in size, and I discontinued on account of the patient stopping the treatment, but the woman lifted a heavy carpet, and whether she tore a blood vessel or not I am unable to say, yet notwithstanding the greatest care was exercised in the application of electricity it ceased to be of any benefit whatever in controlling the hæmorrhage a second time.

There is no question as to the correctness of the remarks made by Drs. Cleaves and Morton. I believe that many cases of hæmorrhage are stopped by the clay electrode, and the more I use it the more I am satisfied that we cause the absorption of adhesions and irritative tissues to be removed, and that we direct our electric force in the nutrition of that womb to such an extent as to interfere with the continued growth and development of a tumor, as well as to control the hæmorrhages.

A question which often presents itself to my mind, and one which I consider of great importance, is, that we should do as little intra-uterine medication as possible. The more you can impress yourselves that it is the endometrium at fault, then make your intra-uterine applications; but unfortunately many cases treated by the sound have no reason whatever. I reported a paper in the *New York Medical Record*, in which I cited a number of cases where I controlled hæmorrhage without the intra-uterine method at all.

Another point I tried to bring out in my paper, and I wish to state that my ambitions are not surgical, and that I took up the study of electricity so that I would not have to resort to any more surgery than possible, and knowing the power of electricity the more I am satisfied we should be more conservative in the treatment of these cases. For at the most the symptom will only exist for a few years irrespective of treatment or operation, and will need no treatment from you or anybody else aside from the anxiety to themselves, and the cases I have mentioned thoroughly demonstrate that.

G. Betton Massey, M. D., of Philadelphia, President of the American Electro-therapeutic Association, Instructor in Electro-gynecology in the Philadelphia Polyclinic, etc., read a paper entitled

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Dr. Bigelow: I appreciate my privilege very much in discussing this paper. He has been doing very much of this, and with very great care. Dr. Massey's work has been done in a scientific and modest way, with a great deal of acumen, and he has done almost all the punctures made in our dispensary. He is much more original than I am, so that almost all these punctures were made by him, and on his own responsibility, and the majority of the results were good. In his private practice he is getting results much better than in the dispensary.

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Dr. Goelet: I have listened with considerable interest to the paper by Dr. Massey, and I am very much interested in the subject. A few years ago I did puncture, but after visiting Apostoli I abandoned it; not because I had any failures but because I was afraid I might have. I think Dr. Massey has made a good point when he says we should have a longer interval between our applications, not only in puncture, but intra-vaginal applications. It is desirable that the effect of one treatment should subside before applying another.

As to the technique of puncture, there is a question as to the advantages of the buried puncture, or of the puncture by a needle not insulated. Two years ago, when I was in Paris, Apostoli was using the uninsulated needle, insulated only to the vaginal surface, and he was very successful with it. Since then he has adopted the buried puncture, I think about a year ago, for what reason I do not know.

For the reason that the vaginal surface is not so very sensitive to puncture, the needle can be introduced and scarcely be felt by the patient, unless the needle is large and much pressure is needed to cause it to enter. I think an important point is that our needles should be as fine as possible. All that is necessary is to introduce the current into the structure, which can be done with a small as well as a large needle.

I had a needle for use in buried puncture, made of platinum and iridium, in order to obtain sufficient rigidity in the needle and prevent bending, and I had to resort to the expedient of rounding it toward the tip of the needle, so as to separate the shank and prevent bending. It is insulated to within a quarter of an inch of the point with a sliding motion, fixed by a thumb screw, which permits the needle to be pushed into the structure as much as needed, after fixing the screw attachment so as to limit the depth of the penetration. To apply it, withdraw the needle so as to have it come within the end of the tip, and placing the tip against the vaginal surface, and the block of rubber through which it passes holds it stiff. This would not be necessary if steel were used, but with platinum and iridium it is. We should be particular about the insulation. We should not have insulation which would peel off. We want hard rubber insulation, gummed on the needle.

While on this subject, I will name a few points as to the indications for puncture, somewhat different, perhaps, and apart from those touched upon by Dr. Massey. I find that Apostoli is using it for the relief of pain, and he does not use more than 50 milliampères for five minutes. He uses it for those painful masses, particularly in the broad ligament, and I was very much surprised at the rapid and great relief afforded by the use of this current in those cases.

Of course we have an anæsthetic effect by the positive pole and a constringent effect upon the blood vessels, so that the phenomenon of the relief of pain is easily explained. It seemed to me, however, that puncturing inflicted a traumatism, but it did no harm, and on my return I used it extensively. I do not think fifty milliampères are necessary, but that twenty or thirty are sufficient. If we can use ten milliampères, which can be used without any danger whatever, it is a good thing. Now as to the objection of continuing the positive pole, as you wanted to use the negative pole to produce absorption: you can produce absorption with a positive pole, and absorption goes on just as well, if not better, than with the negative. I think in those cases of soft myoma that the positive pole is much better than the negative pole.

In regard to abdominal puncture, vital statistics on this subject have been due to the fact that the currents used have been too strong. A few years ago everybody doing abdominal puncture worked in the dark with the idea to destroy tissue. I think that it is a point for deep consideration which Dr. Hutchinson has brought out—that of the reduction of tumors by abdominal puncture with the use of ten to twenty milliampères and several needles; no one can object to the current. There is not enough of it to hurt or to cause adhesions. His needles are no larger than exploring needles and I see no reason why we should not use abdominal puncture, and I think that the objections which have been given are due to the fact that too strong currents have been used, and if these strong currents are not necessary then abdominal puncture is safe.

Another point which Dr. Hutchinson made—whether these punctures being moderate and painless, the patient being able to bear them with a short rest in bed afterwards, a puncture is justifiable, the punctures being made every day for a month, and then the patient being sent away for as many days, allowing a rest for that period, and then the resumption of treatment, and in the meantime the results of the treatment being noted. There is one point in that treatment of advantage. In the first place the patient feels you are doing something for her, as you are treating her every day. These patients are not satisfied with treatments once a week, they think you are not doing enough for them, particularly if they come from a distance, and if you treat them every day for a month, and then send them home for a month I think it is a good thing and not a tiresome treatment.

Dr. Hayd: Every one of the papers we have had have been so good that I do not like to sit down and say nothing.

I think I can say good words in favor of the vaginal puncture for cellulitic deposits; it materially assists in resolution and relieves pain and is practically without danger. I am satisfied, however, that we get in more dangerous territory when we begin to puncture through the abdomen. The longer I practice medicine the more I am convinced of this point. We often find complications which give a great deal of trouble after we have examined the patient and think we have a large fibroid, and then upon opening the abdomen find an ovarian cyst which is encapsuled, or a tumor fibroid in character, which has undergone more or less degeneration, with little cysts or abscesses and yet perhaps no history of a previous septic condition, and I believe the more you suggest abdominal puncture the more possible harm is done, and often a great deal more harm than good. There will be a few enthusiastic and good men like Dr. Massey, who have good results from good work, but there is a question in my mind whether you do not do harm by sending it out by our authority to the general public for use. The intestines do come above the tumor and there are adhesions, perhaps, as also the omentum may be found there, or perhaps you puncture a blood vessel, and then you get hematocele. In the vagina the danger is not so great as the puncture through the abdomen, and I do not agree with Dr. Bigelow when he says that subperitoneal fibroids can not be helped by the vaginal method, for in my cases I believe that the tumor was largely sub-peritoneal, and I am satisfied that the treatments were of great benefit to the patient. Probably that can be explained also, as the sound is directed posteriorly and the current was directed there. Besides, the symptoms of sub-peritoneal tumors do not occur very rapidly and there is no hæmorrhage. The only danger is from pressure symptoms, and it does not seem possible that there can be sub-peritoneal tumors of such size as to give dangerous symptoms unless they are partially intramural, and even then I think that intra-uterine medication does great good.

(*To be continued.*)

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ORIGINAL ARTICLES.

PRIVATE TREATMENT OF INSANITY.

Read in the Section of Medical Jurisprudence and Neurology, at the Forty-second Annual Meeting of the American Medical Association, held at Washington, D. C., May, 1891.

BY N. ROE BRADNER, M.D.,
OF PHILADELPHIA, PA.

Our conclusions are drawn from comparisons. Men rarely either express or entertain any idea that has not been acquired, or suggested, through comparison with more familiar ideas.

In the consideration of the subject of this essay, "the private treatment of insanity," we are naturally led—compelled, indeed—to compare this mode with public treatment of the disease, as uniformly practiced in public hospitals and asylums. As it is to be presumed, the tenor of my remarks will be favorable to the private treatment, as compared with public asylum treatment. And I therefore, at the onset, wish to make clearly known my high appreciation of the great good that has been accomplished by and through the means of our great, grand asylums; and that I would by no means be understood to hold that they are either useless or, as a rule, badly managed. On the contrary, I am glad to say, that nearly all our State asylums are well managed, and have accomplished an unmeasurable amount of good, alike to our insane, and their scarcely less afflicted friends. If any one doubts the value of the work that has been done by these asylums, let them for one moment contemplate the condition of society if, at the present time, they were wiped out of existence, and their legion of inmates let loose upon us. But, as new ages bring new inventions, so do new epochs, and greatly increased population, require augmented and improved means and facilities for their occupation, protection and care. A century ago, the condition of the country demanded public asylums; today, it demands more promising means of *curing* insanity, than are afforded by any public asylum within the scope of my knowledge. I shall but briefly refer to the relative treatment, and consequent probabilities of recovery, as practiced in public and private houses. First of all, I maintain that every public asylum in our land has such a number of patients (or inmates) that, being divided by the number of physicians employed, or engaged in attendance upon them, would give to each physician a larger number of patients than almost any practicing physician, in city or country. In other words, and briefly stated, no patient, in any one of our public asylums, is provided with the professional attendance that he ought to have, unless, indeed, it is in discrimination against some other patient in the same institution. Take, for instance, the institution with which I was for a long time associated; it is a fair sample of all the good asylums—indeed, half of the asylums in the United States were more or less copied from that one. There, we had about 400 patients, a separate building for each sex, and about 200 in each house, and each building supplied with two physicians; 100 patients to each physician, who, in addition to his professional care of his patients, had a large amount of executive and other work to do. Now I ask, how many physicians are there in the United States who, in private practice, see and prescribe for 100 patients daily? I venture to say there is not one, and yet this is expected of the physicians of our public asylums, daily, weekly, monthly, year in and year out. Such being the case, I ask in all candor, can it be expected that a patient, under such circumstances, has the same prospect, or opportunity of recovery, that he would have, if he had *all* the attendance his physician *could* give him? "But," the hospital physician will tell you, "this is all nonsense," that half his patients do not require medicine, or any treatment beyond feeding and restraint, and that ample care is given to all who need it.

Well, gentlemen, if there are any present who are, or ever have been, in charge of an asylum, let me ask if you ever told the guardians of that half of your patients that they did not need and did not get medical attendance? Was not "medical attendance" a prominent item in the bill rendered of that patient's indebtedness to the asylum? And, in all honesty, was not the asylum, in turn, indebted to him, or his estate, to the extent of the medical attendance which he did not get? I tell you, a large part of that half of your patients would soon be removed from your tender mercies, if the real facts were known to those who ought to know all about it. In a private hospital, the physician not only has the time to devote a sufficiency to each patient, but he is compelled to do so. Moreover, it is necessary for his own interest, and this selfsame self-interest has a great influence over all men, including physicians. In all public hospitals, there are some for whom very little, if indeed anything, can be done in the way of medical treatment. Others there are, concerning whom the question is doubtful, whether or not anything can be done. Let us contemplate the condition of this latter class of patients, and see where they would stand the best chance of recovery, *i. e.*, in a public or private hospital. In the former, he stands his chance with ninety-nine others, of seeing the physician at all. Next, it is conceded that fifty others have precedence of him, for the double reason that they imperatively demand attention, and that it is uncertain in his case, whether anything could be done anyway. The physician, wellnigh fagged out by the time he has prescribed for his fifty sick, is scarcely to be blamed if, from day to day, week to week, month to month, he puts off this unfortunate but unpromising, and perhaps not importunate, case. The consequence is, he is permitted to become chronic, and adds one more to those who do not require medical attention. I tell you, I know how it is myself; and, whether or not anything *can* be done for, or towards the restoration of, these chronic cases, true it is, that nothing *is* being done. Why, at this very time, in my own State, the question is being strongly urged and argued, whether or not to build other, and separate asylums for the chronic, or incurable insane. It is well argued in favor of the proposition, that at present public asylums are more like places of detention, than curative institutions, and that under the present system, with the wards overcrowded with "incurables," neither the physician, nor the hospital itself, has the opportunity to do justice to those who are even regarded as curable. Could there be a stronger argument in favor of private treatment of insanity than this very admission, from the physicians and managers of public asylums? I think not. It is not within the province of this address to discuss the propriety of the proposed movement; but, so far as it would lessen the labor of the physician, or rather, remove from him duties foreign to his profession, and thus enable him to devote more time to his real and proper office of physician, and the consequent advantages to those who might be so fortunate as to be regarded as curable, why, I would be heartily in favor of the proposition. But what of the so-called incurable? I have very great objection to the whole suggestion, the moment I look at that side of the question.

First, I object to the word "incurable." Who has the right, and who ought to assume the responsibility, of so discriminating against a portion of our insane, as to brand them incurable? And when it comes down to a practical opinion, who is to say who are and who are not curable? If you or I had a friend in a State asylum, although he had been there a long time, would we be satisfied to see him removed from the very appearance of any effort to cure his disease, and restore him to the society of his friends, and placed as *incurable*, in a booth, as it were, with others, huddled together like a flock of sheep?

The present system of treating insanity cannot be accepted as universally satisfactory, and I need give but a single illustration to prove the fact. A bill is now before the Legislature of the State of Pennsylvania, which is said to have been drafted by ex-Judge F. Carroll Brewster, of Philadelphia, and which provides that *no one* shall hereafter be committed to an insane asylum in that State, until his case shall have been publicly investigated, and a jury of twelve men shall have decided that he is insane.

It is not required nor expected that this jury shall be composed of physicians, but ordinary, everyday jurymen. The bill assumes that sane men are sometimes committed to asylums, and its object is to prevent that abuse. Therefore the present system is not wholly satisfactory; and I could, if time permitted, give you other, and perhaps more weighty and better founded objections.

I cannot permit this opportunity to pass without expressing my disapproval of the proposed law. My first, and most positive objection to the measure, exists in the fact that insanity is a disease, and requires a physician, not only to treat, but to diagnose it; whereas, this proposed law assumes that physicians are either incompetent or improper persons to determine whether or not a patient is afflicted with the disease; that twelve ordinary, very likely uneducated men, are to be the absolute judges of the mental health of the patient. Could anything be more grossly preposterous? The delirium of typhoid, and other fevers, is practically temporary insanity, and who would dare to submit or trust to a jury of laymen the diagnosis of typhoid fever, or indeed any disease which requires the wisdom and experience of a physician to cure? Besides this, there are grave objections to the bill, *per se*. It has been tried in the State of Illinois, and I have had frequent opportunity to witness its impropriety; indeed, its oppression.

Many refined families object to giving any publicity to their misfortune of a visitation of insanity. This law debars their patient from proper treatment until the greatest publicity is given. So greatly have some familes in Illinois objected to the law, that several have carried their patients more than a thousand miles to avoid its provisions, and I have treated the patients, and personally heard the protestations of their friends. A still greater objection exists, and one that I think cannot be gainsaid, which is the loss of valuable time. In some forms of the disease, notably acute mania, promptness is of the greatest importance, and I have known of happy homes being kept in consternation for an unreasonable, unjust length of time, to comply with the provisions of this obnoxious law. I regret to differ even this much, with my good friend Judge Brewster, and gladly concur in his reasoning, "that even if a man were not entirely sane, yet if he were certainly harmless, he ought not to be imprisoned for life with melancholy surroundings, enough in a short time to drive a sane man crazy."

Insanity differs from ordinary diseases, in that restraint is a necessary part of treatment. I believe restraint is necessary in every case of insanity. Of course I do not mean to imply by the word restraint, that the patient is necessarily to be committed to an asylum, nor even deprived of his liberty. But, being deprived of such means of protection as mental integrity affords, he must be at least restrained from wandering into danger, and there is always danger when reason is dethroned. Now, the character and degree of restraint are subjects of the greatest importance. In public asylums, very little regard is paid to the *degree;* almost every patient is totally deprived of his liberty, and this I say is wrong. In such places, the character of the restraint extends from mere restriction to the premises, to solitary confinement, and sometimes to a single spot, by means of mechanical appliances. Now, I will go so far as to say that I believe there are cases, especially of violent mania, when such mechanical restraint is not only admissible, but affords the patient the best prospect of restoration.

I am aware that it is an unpopular admission to make, but we are now seeking for truth, rather than popularity, and I therefore add, that the public institutions which say they do not employ restraint, "the truth is not in them." They all, every one, employ restraint, and why do they deny it? I wish, however, in the most positive, plain, unmistakable manner to say, that no person enduring mechanical restraint should be left one moment alone, nor without the presence of a competent and *kind* attendant; and that the immediate relatives, or friends of the patient, should be honestly informed of the character and degree of the restraint to which he is subjected. Now, in public asylums, such information is generally refused, whereas in a private place such friends may, if necessary, *demand* what is in most cases voluntarily extended to them, *i. e.*, personal information of the patient, and all his surroundings. In a public asylum, patients suffering the mildest form of insanity, and which perhaps, under judicious treatment, might be cured in a very short time, are brought into contact with the worst forms, features and consequences of the disease. Can there be a reasonable doubt that such surroundings would be detrimental to the partially insane? Again, the wealthy and refined are brought into contact with the poor, and sometimes coarse and vulgar. This disregard of social distinction I consider one of the greatest objections to public asylum treatment. Persons accustomed to gentility, who prefer refined society, and, through acquired means, have always indulged in a particular, even extravagant mode of living, should not be deprived of it merely because of a disease. That pioneer American alienist, our Dr. Benj. Rush, was of this very opinion, and unmistakably considered *private treatment* of insanity most desirable. In speaking of this subject of social distinction, and the importance of ceremonies which are due to their former rank and habits of living, and luxuries and observances they had been accustomed to in their own families, and for which they have formed habitual attachment, Dr. Rush, in his excellent "Inquiries and Observations on the Diseases of the Mind," says: "*The great advantage* which private madhouses have over public hospitals, is derived chiefly from their conforming to this principle in human nature, which the highest grade of madness is seldom able to eradicate." And again, strongly argumentative of the same theory, he said: "Recovered patients seldom forget three things: acts of cruelty, acts of indignity, and acts of kindness." Our public asylums are model institutions, and have restored thousands of insane to reason who, through poverty, could not otherwise have obtained treatment. But, if persons possessed of wealth can procure *better* facilities of recovery, why should it not be done? It *can* be, and I am fully persuaded that the time is rapidly approaching, when our medical colleges will each have a chair for the professor of insanity, and many physicians in private practice, devoted to that specialty.

It was an early custom in Java, to kill poor people who were afflicted with insanity, even of so mild a form that it was generally curable, if the patient could afford proper treatment. This was doubtless a cruel discrimination against the poor, but are we not to-day discriminating against the rich? There are already several excellent private hospitals for insane patients established in various parts of our country, and I am satisfied that their number will increase, as new physicians devote themselves to the specialty. This brings into prominence the importance of a suggestion I have repeatedly urged, namely: the proper selection, education and fitness of physicians who are hereafter to have charge of our insane.

My proposition, as repeatedly stated, is to employ, as attendants in asylums, young men and women who wish to study medicine, and who have to earn their way into the profession. It is of very great importance to select smart, intelligent people, for the immediate care of cultured persons who have become insane; and that they should be especially prepared for that responsibility, by education and careful practical training.

Asylum attendants are too often selected for their strength of muscle, and low wages; and this is why we so often hear of their patients being brutally abused. Brute force should never be permitted, and when places in our asylums now occupied by that class of attendants, shall be supplied by medical students, of whom there is an adequate number desiring any occupation by which they can earn their livelihood during pupilage, I am sure, from practical experience and observation, that troublesome patients will not only be more kindly nursed, but that, under such treatment, a larger number will recover.

The second, but no less important, advantage to be derived from the proposition is, that when such students graduate, they will have acquired several years' practical experience in the treatment of the insane, and it cannot be doubted that many of them will adopt that branch of the profession as their specialty, and whether in public or private asylums, or in private practice, bring all their former experience into practical use; curing a larger number of patients than has yet been done, and perhaps eventually restoring many of that unfortunate class, now termed *incurable.*

Wissinoming, Philadelphia, May 2, 1891.

THE HUMAN NOSE NOT IN THE CENTRE OF THE FACE. ITS IMPORTANCE IN THE ADJUSTMENT OF SPECTACLES.

BY A. C. SIMONTON, M.D.,
OF SAN JOSE, CAL.

The fact that the human nose, as a rule, is not situated in the centre of the face, I have never seen stated in any medical journal, or any text-book on ophthalmology that has come under my notice. The importance of this fact to the oculist can scarcely be overestimated, when considered in connection with the adjustment of spectacles for correcting errors of refraction. This fact may have been stated before, but if so, it is strange that it has not been incorporated into every text-book on ophthalmology which deals with the errors of refraction. Every one of these works insists strenuously on the necessity of adjusting glasses accurately to the face, so that the optical centre of lenses shall stand exactly in front of the centre of the pupils, unless for certain reasons the lenses are decentred to get a prismatic effect.

In measuring the face for the adjustment of glasses, oculists are in the habit of measuring from centre to centre of pupils, without regard to the position the nose occupies between the two eyes. Frames are ordered to correspond with the measurement, being exactly the same distance from centre of nose piece to centre of eye wire on either side. Glasses are ground with optical centres in centre of eye wire. Now, instead of having our glasses properly centred before the eyes, as is insisted upon by all authorities, and as every oculist knows the importance of, in a large majority of cases, our lenses are placed in such position as to give a prismatic effect not desired or intended. Is it not possible that herein lies one of the reasons why patients occasionally reject glasses that have been found by proper tests to be their optical correction?

The difference between the two sides from centre of nose to centres of pupil is, as a rule, from $\frac{1}{16}$ to $\frac{1}{8}$ of an inch, seldom is the difference beyond $\frac{1}{8}$ inch. But if the difference is $\frac{1}{8}$, and lenses are mounted in the ordinary way, we have a decentering of both lenses to the right or left, as the case may be, of $\frac{1}{16}$ inch. If the greater distance from centre of nose to centre of pupil is on the left side, then we have, if our lenses are convex, a prism also for left eye, with base in, and for right eye a prism with base out. If they are concave, the reverse would be true. Persons familiar with this subject know how important this would be in lenses of medium to high power.

This brings in a new element not heretofore considered in the grinding and mounting of spectacle lenses. In presence of the facts stated, we are under obligations to take cognizance of the same, and in every case satisfy ourselves whether the centre of the nose is in the exact centre between the two pupils. It becomes necessary to make the centre of the nose the starting point for measurement. I have constructed a simple little instrument which answers admirably for measuring either way from the centre, as follows: Take a piece of wood 6 inches long, 1 inch wide, $\frac{1}{8}$ inch thick, draw a straight mark across its exact centre, and then *one on either side* just 1 inch from this, with the blade of a knife. Outside of the two outer lines mark accurately $\frac{1}{16}$ inch marks until you have reached a $\frac{1}{2}$ inch beyond, making marks near the edge. These marks may all be colored with ink. Now cut out a concave notch in the centre of the marked edge, about $\frac{5}{8}$ inch wide and $\frac{1}{4}$ inch deep. This notch will fit down over the nose, when you must see that the centre line of your measure is exactly over centre line of nose. Now read off to right and left 1 inch and so many sixteenths. Of course any one's ingenuity will suggest how to neatly make this measure. You may construct one much easier by taking a common thin-edged, wooden measuring rule, and make the notch in it at any inch mark; you have your inches and sixteenths on either side already provided. Our instrument makers, no doubt, could construct something very neat for these measurements, with a handle just above the centre, a concave portion just beneath this to rest on nose, and arms extending out to right and left, with proper intervals marked thereon. This might also have little slides with points to stop in front of pupils.

But the measures being taken, what about the mounting of glasses? Surely they must be so set in frames that the optical centre of lens comes before the centre of pupil, no matter where the centre of eye wire is. The frames cannot be constructed longer on one side than the other, else they would not balance, but the lenses must be decentred in grinding to correspond with measurements. This will necessitate a new form of prescription blank, first giving the total measurement between pupils, and then the measurement of each side.

I have examined a large number of faces since the fact herein mentioned came to my knowledge, some months since, and I find it quite the exception for the nose to be centrally situated. I made the discovery on my own face, in which case the right pupil is $1\frac{1}{8}$ inches from centre of nose, and left $1\frac{1}{4}$ inches.

THE Woman's Medical College of Minneapolis has been incorporated according to law.

MODERN MEDICAMENT.

BY C. B. MEDING, M.D.,
OF NEW YORK CITY.

Of the physician's duty toward his patient much has been set forth by the press, medical, religious, and secular. It remains for our body to present and enlarge upon as well as to impress one another with the importance of our duty toward ourselves. Though often lost sight of, it is still of first magnitude, morally, professionally, and financially. However strongly it may be held that professional life has in consciousness its own reward, however often it may be reiterated that worldliness is no part of our creed, the truth remains that, in common with the rest of humanity, we must live and must fight for life. We have enemies, we have opposition and competition, antagonistic factors that will of necessity be victors or *vanquished*.

Not a few of us here present have found that the voyage is not over an altogether smooth sea, is not free from storm and hurricane, not safe from shoal and rocky coast line, and while we pilot fellow craft through the billows of accident, while we gear the engines of stranger ships, if we would be thorough seamen we must steer our own bark aright, weathering successfully the tempests we are sure to meet.

The *old* has no rights over the *new*, whether in medicine, theology, philosophy, or astronomy; its principles must change with the *times*, its *tenets* must bear reform. To the survival of the fittest there is no exception, and while we accept for diagnostic purposes new etiology, new methods of examination and deduction, we must perforce take hold on new treatment.

I am afraid that many who are and ought to be opponents of homeopathy know little of the real therapeutics, much less of the principles of that school. I am afraid that outside of "similia similibus curantur" and "high dilution" little is known or cared. But a direct and successful opposition must be based on knowledge. If the system of medicine practiced by us is right, if it is worth study, attention, and continuation, it is also worthy of protection. If the opposers of it claim fallacies as against it, we as men should be prepared to maintain our position by a full refutation based on intelligible facts, and I am one steadfast believer and practitioner of the old school who has had the truth forced upon him that homeopathy is, under existing circumstances, his greatest enemy, that it has done and is doing more harm to all regular practitioners than any form of quackery; that it has made many semi-converts and at the same time has fostered ignorance and misapprehension; all this not because of superior efficiency from strength of basis or soundness of principle, but through pleasant dosage and a common sense plan of cheap and ready medication.

The age that cries for rapid transit, electric conveniences, automatic novelties, in a word, for everything that may lessen the friction of life; the age that demands comfort, ease, and luxury, in every bypath of its daily walk, will not accept vile concoctions even at the hand of learned men, nor will it long consider learned those who continue such medication, and the best purpose homeopathy can ever serve will be the teaching the abandonment of filthy compounds.

There is no reason why we should persist in prescribing nauseating drugs. The moral effect of such medicine may be useful in hospitals, purging them of simulating patients; the so-called "bum mixture" has its place, but alas it is most often prescribed in private practice to delicate patients. Let me recite a few facts and see if we can find causes for them.

It is a common occurrence to find parents choosing homeopathic treatment for their children, they remaining alopathic.

It is commonly said by intelligent persons: "Oh yes, in severe cases I prefer the old school, but for simple ailments homeopathy will do."

It is not uncommon to find a homeopathic medicine book in the homes of old school people.

Few physicians have escaped the pleasant scene of a couple of half filled tumblers with the ever present saucer and spoon, in the nurseries of their patients.

We cannot, if reasonable men, ignore the homeopath, nor browbeat the laity with any satisfaction. We cannot sanely call all homeopaths fools, and decisions arrived at by the popular mind are the indicies of progress, and popular logic has its place. This being the case one cannot ask a people to more readily believe in the necessity of assofœdita and senna than that the thirty-third dilution of a single drop is stronger than the drop itself. Both are preposterous, but of two evils common sense chooses the pleasantest.

I do not consider it a difficult task to prove the falseness of homeopathy considered as an all providing and sufficient system. Any man can prove empiracy to be the only sure basis, but to prove worthlessness in anything but sin is impossible. Outside the more or less well defined circle of physiological effect on the average normal subject, we find individual idiocyncrasy a powerfully modifying factor. But the dose admits of common sense. We cannot deny two things; first, that with liquids the old school prescribes *large* vials and *spoon* doses while the homeopath gives *small* bottles and *drop* doses; in solids we lean toward *few* pills or capsules regardless of *size*. The homeopath gives *small* pills regardless of *number*. I ask you, both being possible, which is the most reasonable?

Two further factors worthy of consideration are the *patent medicine* and the *drug store*.

As regards the first I believe its success is due not to the gullibility of the public, for many purchasers are intelligent reasoners, but to three inherent and ever present merits, *cheapness*, *pleasantness* and *safety*, exactly the merits of homeopathy, precisely the merits, gentlemen, that recommend any purchasable artible. *Cheap* because they diagnose, explain, and treat for the same money; *pleasant*. Take any one of the successful remedies of the day and tell me, despite your opposition, are they not elegantly prepared? do they ever sour, mould, or precipitate? Are they ever unsightly? Is there any illegible writing to be read? Are they ever nauseating? Are they not always one bottle exactly like another of its kind? *Safe*, for obvious reasons. Is not the reverse often true of our prescriptions?

The *drug store* may be justly likened to a traitor in friendly garb. It is not the counter prescribing, nor yet the information culled from presciptions that effects the question, but the prices charged for drugs. Of this the most casual observers need neither explanation nor example other than their own experience. With some there may be a question as to where to draw the line of personal affairs. For my part I must admit that the vast majority of people belong to the great middle class, to whom success means simply a balanced ledger at each year's end, and to whom extortion is robbery. Every man has the right to do as he will with his own. If I am not satisfied, you say, I may go elsewhere. True, but in the time of necessity I must pay, for I am compelled to have. A price based upon the sum of cost and profit is reasonable, but there is no honor nor fairness in the price based on man's necessity.

Many reputable physicians have taken to carrying with them a supply of simple drugs, believing that they are entitled to a share of the patient's money. It requires no deep reasoning to see that a man in humble circumstances cannot pay equally doctor and druggist, and that if the doctor must give credit while the druggist need not, the former is the loser.

More than this, some physicians are to-day carrying a small stock of common medicines for office practice. This is a good thing, it will have a twofold effect. It will cause the city physician of the old school to become acquainted with the medicines he prescribes, will cause him to consider palatability, and patronize all efforts to afford a happier dosage; it will also compel the stores to sell at more reasonable prices. It is our duty to oppose all, who antagonize the best interests of the highest profession and prosper homeopathy, charlatanism, and patent medicine.

The day is happily not far distant when the uneducated will be cut off from medical study; when State examinations will make low grade colleges impossibilities, but at present there are many good reasons why we confess so many sad writers and poor students. Incompatibility is now taught to prevent poisonous or explosive compounds and for nothing more. It has been said that city physicians have least faith in the materia medica, country physicians most; true it is that the former never compound, seldom see and never taste their medicines, hence their fearful mixtures.

Now a few points along which to draw the lines of opposition. It is time for us to,

1. Combat the growing impression that *old school* means dosing.
2. Prove that *alopathy* does not mean extravagant drug bills.
3. Prove that we, too, can treat the emergency and are not *altogether* dependent on the drug store.

These three now truthful ideas may be banished successfully by following the physiology, chemistry, therapeutics, and common sense of the day. Let us,

1. Reduce four and six, and eight ounce vials to one, two and three ounce; and the dose from drachms to minums.
2. Reduce the number of prescriptions, seeking simpler medication and less complication.
3. Use consentrated tinctures and extracts, compressed solids, and active principles.
4. Abolish decoctions, infusions, and crude drugs; cease ordering ounces of vehical to carry grains of medicament.
5. *Carry carefully selected drugs*. Dispense such medicines as may be conveniently handled, raising our profession to its old time usefulness. Such a course will,

1. *Reduce the price*. A druggist cannot charge the same for a two ounce as for a four ounce vial, even though the difference be only *boiled* water. It will
2. *Abolish* that large *class* of preparations of which

our text-books say, "*used mostly as vehicals.*" It will,

3. *Prove us consistent*, for it is no more ridiculous and blameworthy to attend a confinement without ergot, instruments, and antiseptics, than to enter the abode of sudden sickness at midnight armed with simply paper and pencil.

There is an opinion abroad that the doctor has nothing to do with cost, but my impression is that doctor from doceo means to teach, and the good teacher is interested in all that affects his pupil. He who is not a teacher is not a doctor, but a leech; of course it is for every man to choose his own professional title.

A druggist is no relation to a physician and he should be none. The percentage system is criminal extortion, and that man illy serves his patient who lays up treasures in a druggist's till. I believe that if every physician would buy his drugs, his own prescription blanks, segars, postage stamps, etc., it would be better for all hands.

It cannot be brought against such rulings that heroic treatment necessitates dosage, for nastiness and quantity are not synonymous with strength.

Again, why should we not seek the proper compounding of preparations? Why should pills be made in sixteenth century sizes and modes, if they are to be sold at nineteenth century prices? Why should not fresh parvules and pills and tablets be made by men who style themselves dispensing chemists, apothecaries and pharmacists?

Lastly, why cannot we turn against medicines famous most for their filthiness?

You ask where this line is to be drawn. Will not palatability lead to the elixer, would that be advisable? Such is the argument and objection of the extremist. It is not necessary to have the child cry for medicine. I do not desire adults to prefer drugs to food. Very far from my creed is it to claim that medicament must be nice or useless. Many times in the practice of every man will come the cases where taste and cost sink in the imminence of death, but in over two-thirds of our cases, petty ills, trifling disorders, and simple ailments comprise the trouble, and here we can show that the grand old school has not only age but also modern weapons for the warfare with disease.

The country physician laughs at the city man's medicine, yet he has learned better only by experience.

Is it true that the homeopath has better results with children than we do? Well, if it is true, the reason is not in any superior system, but in drops instead of drachms; in pellets instead of marbles.

You cannot read how to improve; there are no books, no colleges. Edinburgh, Glasgow, London, Heidleburg, and Vienna, all are fighting tooth and nail for the black draught and blue bolus. Improvement, progress, civilization, however, demand responsive souls. You cannot bribe the great time, it will onward and in its train humanity rises to higher levels.

The searing iron stopped many a hæmorrhage in the past, why not continue its use? Microbes were never molested until lately, why bother them now? Thousands of persons were operated without anæsthetics and survived, why so tender now?

Because the age demands, invention supplies, and discovery brings forth. We are working, studying, pressing forward and onward toward a brighter, higher end. Then can you, lag behind? Dare you loiter, tracing out old footsteps time has well nigh obliterated? Dare you stand copying masters, progress calls children? Is it not your duty to steer this light-ship carefully, scientifically, reasonably, always mindful of the good, ever willing to discard the bad? That they who navigate the eternally rolling sea may, seeing its brilliance, guard their craft accordingly.

INTUBATION IN DIPHTHERIA.

Read before The Mitchell, Ind., District Medical Society, Dec , 17, 1891.

BY P. RICHARD TAYLOR, M.D.

I will make a strictly clinical report of four cases of intubation, selected from a number during the recent endemic of diphtheria in Louisville, two of which were fatal, and two successful.

Case 1.—Oct. 29th; I was called by Dr. Ernest Yeager to intubate the larynx of Robt. W., æt. 7 years and 5 months. On examination I found diphtheritic patches on the tonsils and in the pharynx. In the larynx the mucous membrane was swollen and tumefied, but there was no false membrane. Respiration, 36 per minute; pulse 150 and thready; temperature 102½. He was in a semi-comatose condition and very much cyanosed. The intercostal spaces were depressed and did not rise with inspiration. The dyspnœa was distressing. A tube the size required for an eight year old child, was introduced into the trachea, which relieved the dyspnœa immediately. At the end of an hour, respiration was 22; pulse, 140. Quinine by inunction and iron internally were prescribed. Milk, six parts, whisky, one part, to be given alternately with beef extracts, were ordered for nourishment. A spray of peroxide of hydrogen was used every hour. The following morning, the temperature was 99½; pulse, 120. I saw the child again on the sixth day, found the temperature normal; pulse 100. The tube was removed on the seventh day, the child making an uninterrupted recovery.

Case 2.—Nov. 2nd., I was called by Dr. Robert G. Fallis to intubate the larynx of Rose H., æt. 2 years and 8 months. Upon examination, I found diphtheritic membrane in the nares and pharynx, on the tonsils and tongue and in the larynx. The child had been sick but forty-eight hours; the temperature was 102; the pulse, 150; the dyspnœa excessive and progressing. A tube the size required for a child three years old was introduced into the larynx, relieving the dyspnœa immediately, and in ten minutes the child was asleep. Quinine by inunction, iron internally, were prescribed. A spray of sulphurous acid and water, equal parts, was ordered. Milk and whisky, alternately with beef extracts, were given as nourishment. On the morning of the second day, found the temperature 100; pulse, 130. On the morning of the third day, temperature 101; pulse 140; face flushed; membrane yellow and breaking down. A spray of peroxide of hydrogen was ordered to be used every hour. On the morning of the fourth day, temperature 104; pulse 150 and thready. On the morning of the fifth day, the temperature was 105½; features pinched; respiration 36, very restless. These symptoms continued until the child died in the afternoon from septic poison.

Case 3.—Nov. 5th, I was called by Dr. Ernest Yeager to intubate the larynx of Clarence M., æt. 2 years and 8 months. Considerable delay was occasioned in reaching the child which I found unconscious; extremities cold; sphincters relaxed; wrists pulseless; and pronounced apnœa. A tube the size required for a child four years old, was introduced into the larynx without delay and artificial respiration continued for a few minutes until respiration was restored. At the end of the hour, the patient was conscious; respiration 22 per minute: temperature 101; pulse 140. Milk and whisky were given as nourishment, and quinine by inunction was ordered. A spray of peroxide of hydrogen was used every hour. At 8 P.M., two hours later, I received a message to the effect that the child had dislodged the tube while coughing. Upon examination, I found a large piece of membrane tightly plugged into the lower end of the tube, which prevented the escape of the air from the lungs, and the child's effort to remove the obstruction by violent expiration had forced out the tube. A tube the next larger size was substituted, and on the sixth day it was removed, the child making an uninterrupted recovery.

Case 4.—On the morning of Nov. 5th, I was called by Dr. G. Fallis to intubate the larynx of Julia S., æt. 20 months, a case of two day's standing. The dyspnœa was present on the first day and had gradually increased. I found membrane on the tonsils and epiglottis and in the larynx. A tube the size required for a child two years old was introduced into the larynx, with prompt relief of the dyspnœa. The temperature was 101½; pulse 148. Quinine by inunction prescribed. Whisky and milk given as nourishment, and a spray of peroxide of hydrogen was directed to be used every hour. The following morning, the temperature was 99½; pulse, 120. Digitalis was prescribed on the third day, temperature was normal, pulse 115. Patient improved steadily, and tube was removed on the fifth day, and the breathing was almost normal; pulse 110. Two days later, I called with the doctor and found the dyspnœa sufficient to warrant replacement of the tube. I found no membrane, but the lining of the larynx was tumefied; pulse 140 and thready; temperature normal. Three days later I visited the child, found it playing with its dolls; temperature normal; pulse 115, thready. The child kept its mouth tightly closed and its nostrils widely dilated. Its appetite was good. I, again, removed the tube; respiration was normal, but the child continued to keep its mouth tightly closed and its head bent down. Examination showed the palatine muscles were paralyzed; the soft palate flapped back and forth as the air passed to and from the lungs; the vocal cords were stretched wide apart; the apex of the epiglottis was curled upon itself. Three hours later there was a recurrence of the dyspnœa; fearing it might grow serious, I replaced the tube. Late in the afternoon of the same day, I received a message that the child had died suddenly while playing on the floor. Examination showed the tube was in its proper place, the child evidently dying from heart-clot.

Intubation, in diphtheria, is indicated as soon as dyspnœa becomes progressive, and is due to laryngeal obstruction resulting either from false membrane, or tumefying of the mucous membrane and surrounding tissues, under which conditions the introduction of the tube gives immediate relief.

The size of the tube is governed by the child's age, according O'Dwyer's system of measurement, except in such cases where the tube has been dislodged by coughing, when I invariably substitute the next size larger, and this latter, my experience has taught me, is absolutely essential.

The nourishment must be liquid, or else in the form of ices, and must be administered by the spoonful, the patient either sitting in the upright position, or lying on the side, and taking the entire contents of the spoon at one swallow to prevent the passage of the liquid into the tube.

The removal of the tube between the fifth and the ninth day, ordinarily, is safe, but in some cases, I have left in position as long as twelve days. Its removal leaves the vocal cords stretched wide apart, the epiglottis standing almost straight and stiffened from being held several days in one position, and also leaves it unable to perform its normal function, rendering it necessary, for one or two days longer, to give liquid food by a spoon.

In two cases cited above death resulted from septic poisoning and heart-clot, and, frequently, exhaustion is the fatal cause. The specialist renders breathing possible, yet he, with all his apparatus, and the general practitioner, with all his medicine, can give but a grave prognosis in diphtheria.

LAPAROTOMIES PERFORMED DURING THE PAST YEAR.

BY THOMAS OPIE, M.D.,
OF BALTIMORE, MD.

Mr. President and Members of the Southern Surgical and Gynecological Association:

It is with no little diffidence and apprehension that I offer this Society a paper which is the beaten track and the hackneyed theme of a narration of cases, especially since it has been made up little by little as the fragments could be wrested from the busy activities of the practical doctor.

I do not come before you with the promise to present new, and therefore interesting facts; all of us might admit the paucity of facts, even in the great province of medicine, yet all are earnestly looking and longing for them. Every statement, proposition or theory in any department of medicine before it can be reckoned among settled facts, must be submitted to a calm judicial consideration, publicly and openly, before the bar of the medical profession.

In new fields the caution and deliberation of the profession is especially commendable. The experience of many observers is desired; full and free discussion is sought; extensive statistics are essential. In submitting this statement of a year's work in Abdominal Surgery, though it be small as compared with that of many operators, it is to be hoped that it will elicit a full and frank interchange of experience and thereby help, in some measure, progress in this department of Gynecological Surgery.

In doing so, I do not hesitate to say, that every narrator of his personal experience should, when before the tribunal of the Profession, feel that the withholding of a single error of omission or commission, vitiates his confession. We want the truth, but more, we earnestly desire the whole truth.

Statistics framed in this spirit would be invaluable to the profession and therefore, to the human family. In other words, "every man should be his own critic." The accompanying tabulated statement embraces thirty-two abdominal sections made in the twelve months, beginning November 1, 1890, and ending October 31st, 1891.

This list does not include the whole number of laparotomies performed at the Baltimore City Hospital during the time stated, since this institution opens its doors to all operators of good professional standing, who may see fit to attend and operate on such cases within its walls.

The writer had the misfortune to receive an attack of septic empoisonment on December 10, 1889, from the prick of a pedicle needle, while performing a laparotomy on a case of septic peritonitis. This report therefore, represents his first year's work, immediately following that interruption, which lasted over a year.

It has been said in connection with this important and relatively new work, that there is "too much surgery."

In answer to this charge, I would say that this question can best be decided by surgeons.

> "Everything is by calm behest,
> Besigned to him who understands it best,
> But every wordy, theoretic leech,
> Can teach the teacher how he ought to teach."

It is a sad state of things if we can say of any individual surgeon that he is not wiser at the end than at the beginning of his year's work. He can, however, no more than the physician, claim immunity from mistakes. If he be wise or skilful, he will not be chargeable with repetitions of the same mistakes; thus he, as well as his future patients, will profit by his failures. Moreover, there is inevitably an error in judging the work in this or any other branch of medicine, by the results of individual operators. The whole of a thing can never be accurately determined by any one of its parts.

The statistics in this new field are as yet comparatively small, and the facts are few. It is quite well established that the happenings incident to surgery will bear a very close relationship to each other in every one hundred cases. It is equally true that knowledge, calmness, deliberation, cleanliness and promptness in coping with emergencies, constitute the differences between surgeons. A succinct definition for science is, methodized knowledge. but something must be added to cover the work of the surgeon, viz.: common sense and sound judgment. It is also true that with a skilful surgeon, each 100 cases in his own experience, should be a success beyond its predecessor.

Would it not subserve a good purpose to adopt some uniformity in our mode of collecting statistics? It might be an improvement if all members of this Society would alike, report their work in this department fully from one meeting to another, or at least upon some uniform plan. As it is, the statements are fragmentary, and therefore, not so valuable, since successful cases are given prominence and failures are apt to be overlooked. It is agreeable to recount our successful ones; it is a very severe test to confess our losses.

What there has been of error or detraction in my work, I will, as frankly and as fully as I know how to do, place it before you conspicuously in the early part of this statement; nor will ask you to "hide the faults (you) I see."

UNSELECTED CASES.

The operations were performed consecutively as set forth in the accompanying table; they were:

Ovarian Tumors	6
Chronic Ovaritis	7
Fibroid Tumors	4
Pyo-salpynx	5
Retroflexions with adhesions and dysmenorrhœa	3
Exploratory Incisions	3
Extra Uterine Pregnancy	1
Abscess of Ovary	1
Cyst of Broad Ligament	1
Cystic Degeneration of Ovary	1
Total	32

Nine of these patients came to me through the dispensary connected with the College and were operated on in the amphitheatre before the whole class at the College of Physicians and Surgeons. The remainder, twenty three, were operated on privately. Twenty seven were white and five were colored.

DEATHS.

The deaths were as follows:

Oöphorectomy for Pyo-salpinx	1
Shock from Ovariotomy	1
Oöphorectomy for Acute Mania	1
Abdominal Hysterectomy for Fibro-Cystic Tumor	1
Total	4

No attempt will be made to describe fully each individual case, but the classification will admit of a separate discussion of the various classes of disease or operations and enable the writer to select and lay before the Association what seems of special interest.

In such a report as this the deaths are commonly regarded as a stigma, nevertheless they are usually instructive. I must give a full account of my stewardship, and consequently trespass upon your time with the details of each one of them.

Case 7.—Colored servant, single, had received dispensary treatment for several months for gonorrhœa. The diagnosis was made out correctly, as the sequel proved, as gonorrhœal pyo-salpinx. The urgent necessity for surgical interference was impressed upon the patient but the operation was long deferred. On the 5th of February, 1891, a laparotomy was performed. Both ovaries and both tubes were matted together and adherent to the intestines in the posterior cul-de-sac. They were with difficulty removed. The left tube burst in detaching it and its virulent contents were discharged into the peritoneal cavity. The pus was easily squeezed out of both tubes, after removal. The abdomen was flushed out. Alarming hæmorrhage ensued from the denuded surfaces of the cul-de-sac which was arrested by packing it firmly with iodoform gauze. This was removed in six hours. Her temperature rose to 101 degrees during the night and reached 103 degrees the next day; pulse 130. She died on the third day of septic peritonitis.

Post-mortem: Flakey lymph and pus over intestines. No fluid in abdomen. Ligatures had held securely.

Case 10.—White, age 50, married; visited me at the hospital about February, 1891, received an opinion that she had an ovarian tumor which was fully developed, and should be removed at once. This advice was disregarded. She returned home and remained there until about six or seven weeks later, when a letter from her physician impelled her to come on for the much needed surgical treatment. She was admitted on the 16th of March, and operated on the 19th. Her condition was bad. Her temperature was 100 degrees and pulse rapid. Her abdomen was very sore under palpation. The colloid contents and the solid elements of the tumor weighed over twenty pounds. The whole abdominal wall seemed ablaze with inflammation; the intestines were largely adherent to the tumor and matted together. The contents of tumor would not run, but had to be scraped out piecemeal by the hand. She was profoundly shocked; hypoderms of whisky were given freely; milk, beef tea and whisky were administered per rectum; though retained, they were of no avail. Death ensued at 3 A.M., I think from surgical and chloroform shock.

Post-mortem by Prof. Kierle. No blood in abdomen whatever; abdominal cavity perfectly dry. Ligatures tightly adherent to parts. Organs healthy. Died of shock.

Case 18.—White, aged 18, single, family history good. Had had periodical attacks of mania. The first attack came on simultaneously with her menstrual flow at fifteen years of age. Her menstruation was always accompanied by severe pain. Six months ago she had so severe an attack of mania that she was sent to an insane asylum. On the third day after the operation, mania set in; she could not be kept in bed. It was impossible to keep her bandage on. She grew more and more violent and died January, 23, 1891, thirteen days after the operation.

Post-mortem by Prof. Kierle; complete post-mortem not allowed. Kidneys markedly congested. No fluid in abdomen. Lungs congested. Brain not examined; probable cause of death here.

Case 32.—W. M., white, married when 21 years of age, sixteen years ago: had three children and one miscarriage.

Five years ago noticed a tumor in her abdomen, which gradually grew larger and was said to be an ovarian cystoma. She suffered from frequent hæmorrhages. They were profuse in character, and at irregular intervals. On examination, a tumor as large as a man's head was realized in the abdomen. The uterine probe ran up into it three-fourths of its length. An abdominal incision was made about eight inches long; the tumor was lifted out of the abdomen and secured by Baker-Brown's clamp. The bleeding was readily controlled, and the peritoneal cavity flushed. The abdominal wall was closed with silk-worm gut and the stump secured in the lower angle of the wound. Though severely shocked, she rallied well. The mass comprising the fibroid, womb, ovaries and tubes, weighed ten pounds.

The patient did well for three or four days, but after this her pulse and temperature began to rise, and she died on the seventh day of septic peritonitis.

Post-mortem by Prof. N. G. Kierle; wound had entirely healed up; the clamp was tightly holding the stump. Abdomen contained two ounces of bloody fluid. The intestines were adherent and covered with inflammatory lymph. Kidney soft and fatty; liver, fatty. Death from septic peritonitis.

EXPLORATORY LAPAROTOMY.

Case 4.—Age 46; operated on January 5, 1891. The exploration revealed malignant degeneration of the left ovary, with cancerous cysts studding the peritoneum and intestines. A large amount of abdominal fluid was removed. The cavity was thoroughly flushed and the walls closed. Patient returned home in three weeks greatly improved. It must needs have been temporary.

Case 22.—Age 25, married, sterile. Operated August 26, 1891. A large malignant growth was found in the left side involving the corresponding ovary and the liver. Patient had icterus at the time of operation. Stitches removed on the eighth day. She improved rapidly and returned to her home in good spirits.

Case 26.—M. O., age 33, widow; had two children and one miscarriage during wedlock. Operation, Sept. 26, 1891. Performed criminal abortion with a tortoise shell bonnet pin. On admission a digital examination was made. The pelvis was blocked with exudates. In the centre of the posterior cul-de-sac was a boggy point, the field all around solid to the touch. Percussion and palpation indicated the extension of the inflammation and effusion high up on the left side of the abdomen. The temperature in the mornings was about 101 degrees; in the evenings 102½ to 103 degrees.

An exploratory incision was decided upon, and made in the median line. It was impossible to explore the pelvis; the strong resistent adhesions and exudation was an effectual stay law. A large amount of bloody serum was flushed out. The temperature, at the time of operation 102°, began to decline at once; the effusion was gradually absorbed; at the end of three weeks there was no sign of the pelvic trouble. Drainage was not used in any one of the three exploratory laparotomies.

The number of these cases is too small to prove anything, but they are suggestive and add to already strong testimony which is recorded, that a laparotomy done in a thoroughly aseptic manner is a warrantable resort, when the indications are threatening and the diagnosis doubtful.

OVARIAN TUMORS.

The six cases of ovariotomy made good recoveries with the exception of No. 10, in which there was realized extensive peritonitis on opening the abdomen. This case is reported among the deaths.

Case 2.—White, single, aged 38, was an interesting case, since in addition to the cystoma of the right ovary, which contained two and a half gallons of fluid, there was on the left side a dermoid cyst, the size of a child's head. The contents consisted of bone, hair, etc. The pedicle of this tumor was four inches wide, hence there was some difficulty in constricting it efficiently even in sections. This patient, strange to say, menstruated regularly up to August 25, last, within three months of the time of operation. She suffered from attacks of mental aberration during a year prior to the operation. Excellent recovery ensued both mentally and physically, which has been maintained without interruption from the time of the operation up to this date.

Case 21.—White, single, aged 16. Her abdomen approximated the size of a women at full term, before the operation. She and her friends noticed the enlargement of her abdomen for the first time four years ago, when she was twelve years of age. It is fair to conjecture that it had filled the pelvis, and like pregnant uterus had developed into the abdominal cavity at that time. If there is a parallel between the nutritive growths in these two conditions, this tumor must have started at a very early age, possibly when she was eight or ten years old. Her first menstruation was in January last, and it recurred irregularly afterwards. She bore the operation and the subsequent treatment with great fortitude and made an excellent recovery.

The other four cases of ovarian tumor presented nothing of special interest, save their complete and permanent recovery.

CHRONIC OVARITIS.

In this class there were six. Among them was Case 17; single, age 20. She began to menstruate at fifteen. Her first epileptiform spasm began coincidently with this event. From that time up to the time of the operation, she had these attacks both during the interim and at the time of the menses. The attacks were more severe just preceding the establishment of the flow. They were attended by convulsive movements of a pronounced character, followed by a period of stupor and sleep, lasting fifteen or twenty minutes. At other times they were caused by over-tax, by mental worry or excitement. The intermenstrual spasms were attended by slight twitchings and a short sleep. Her friends, prior to seeking relief by oöphorectomy, had spent quite a fortune in their efforts to cure her, having had her under treatment of some of the most eminent neurologists in New York. Electricity, massage, drugs, all in turn proved unavailing. No difficulties arose in the operation. A few days after the operation she had several spasms, but no harm ensued from them.

Convalescence was uninterrupted and rapid. She spent several weeks at the sea-shore and paid me a visit on her return home. The young lady had gained notably in weight and strength but the intermenstrual form of the attacks still recurred. At this writing I am unable to state her condition.

Case 18.—White, single, 18 years of age, was an interesting case of this class, who had an attack of acute mania at the first menstrual flow. Six months ago she had a recurrence of insanity, and was sent to an insane asylum. Oöphorectomy was followed by acute mania. She was uncontrollable. Death ensued from sepsis. The case has already been reported in this paper under the caption of the deaths.

Case 12.—White, single, age 21. Had always been sick since childhood; had been for years subject to recurrent attacks of follicular tonsillitis. Her menses were established at 17; about that time she had a severe attack of typhoid fever. For six months prior to the operation of oöphorectomy she had been bedridden. She was hopeless, dyspeptic, and anæmic in the extreme degree. Her neuralgic headaches, and ovarian pains were intolerable at each menstrual epoch. She readily accepted the proposal as to removal of the ovaries. The operation was borne courageously, and her convalescence was uninterruptedly good. Upon her return to her home in Baltimore she relapsed into her former despondent condition. She has not fulfilled my expectations as to complete cure, though she has improved physically.

Case 14.—Age 23; white; single. Was healthy until 13, when menstruation began. At first the recurrences of it were painless and regular. An interruption of four months occurred, and dysmenorrhœa, menorrhagia and ill health followed. Tormented by her physical pains and disqualification, and her inability to support her aged parents, she sought oöphorectomy as a last resort. It has brought about excellent health and capabilities.

Case 16.—White, aged 22; single. Unlike the preceding case, had led a life of luxury and ease. Her dysmenorrœal pains in defacation and general depreciation in health during five years, caused her family to seek the removal of the ovaries. Perfect satisfaction as to health, cheerfulness and comfort has come both to her and to her friends.

Case 27.—Age 39, colored; washerwoman; widow. Operation Oct. 8. Had one full term child and one miscarriage. This patient was operated on by me one year ago for a deep laceration of the cervix. While the parts healed well, she was not benefited as regards her distressing and disqualifying dysmenorrhœa. The appendages were removed. She is still in the hospital. All the indications betoken a happy issue out of her afflictions.

It is noteworthy that five out of six of these cases of chronic ovaritis were single, and that their ages range from eighteen to twenty-three years.

PYO-SALPINX.

The five cases under this heading all made good recoveries but one, which was a very unpromising one. Both ovaries and tubes were packed in one conglomerate mass in the posterior cul-de-sac; one of the tubes ruptured on removal, causing septicæmia. It is interesting to relate as bearing on the etiology of this disease, that every one of these cases was undoubtedly gonorrhœal in origin.

Two had been under treatment in our dispensary by Dr. W. S. Gardner, and the other three were ladies who were innocent victims to the viciousness of their husbands. I prescribed for one of the males a short time prior to marriage for gonorrhœa, and was greatly astonished not long after that event, to find him with a bride whom he had infected by the same disease. Six months later the uterine appendages were removed. The other two confessed to having transmitted it to their wives. One of the cases was an extremely critical one, since a pus tube had burst and discharged through the rectum three months prior to the operation. From that date to the operation the lady was disqualified for any household duty, though she had around her a large family. When operated on six months ago, she weighed 130 pounds; she now weighs 160 pounds, her weight when in former good health.

FIBROID TUMORS.

Two abdominal hysterectomies were performed for fibro-cystic degeneration of the uterus. The first was

Case 11.—The abdominal incision was 14½ inches long from the sternum to the pubis; the tumor weighed over twenty pounds. Its vertical circumference measured 23½ inches, and its transverse circumference 22¾. There was, in view of the very large pedicle, considerable difficulty in securing her against hæmorrhage, hence the intra-abdominal method of treatment would most likely have failed had it been resorted to. A full description of this case has already been published in the proceedings of the A. M. A. of 1891. The patient was unburdened, and health is now being enjoyed.

The second was a case of supra-vaginal hysterectomy for a fibro-cystic tumor of the uterus. This has been described.

Case 24.—The third case of fibroids gave the following history: Her first intimation of a tumor was October 18, 1890. While playing on the piano, she had a rush of blood which filled a chamber. This was the time of her menstrual flow. She bled alarmingly at each menstruation. Prior to operation she had bled continuously for a month. Diagnosis was intramural fibroids, chiefly occupying the posterior wall. The pelvis was well filled by the tumor. While

BALTIMORE CITY HOSPITAL—ABDOMINAL SECTIONS.

Color.	Name.	Age.	Date.	Single.	Married.	Children.	Miscarried.	Disease.	Operation.	Drain.	Complications.	Recovered.	Died.	Remarks.
	H. T.	30	Nov. 13, 1890.		M.	5		Retroflexion. Dysmenorrhœa.	Removal of both ovaries. Hystrorrhaphy.	No.	Stitch Abscess.	R.		Examination before leaving the hospital showed the displacement to have been corrected. Health restored.
2 W.	W. E.	38	Nov. 21, 1890.	S.				Ovarian tumor and dermoid cyst.	Extirpation of both tumors.	Yes.		R.		Right ovary distended with 2½ gall. fluid. Nearly its entire surface was adherent to abdom. wall. On the left side was a dermoid cyst the size of a child's head, the pedicle of which was four inches wide. Recovery complete.
3 W.	H. L.	37	Nov. 28, 1890.	S.				Chr. ovaritis, dysmenorrhœa and hysteria.	Removal of both ovaries.	No.		R.		A working woman totally disabled from making a living; was anæmic, subject to dysmenorrhœal pains, vertigo and fainting fits. Health has been entirely restored.
4 W.	B. C.	46	Jan. 4 1891.		M.			Cancer of the ovary.	Exploratory laparotomy.	No.		R.		Large cancerous cysts studded the peritoneum and intestines. Ovaries had undergone malignant degeneration. Abdominal fluid was removed, the cavity flushed. Patient returned home in three weeks much improved.
5 W.	P. N.	17	Jan. 9, 1891.		M.			Subperitoneal fibroids.	Myomectomy, Oöphorectomy.	No.		R.		Had been bed-ridden for six mos., though sick for years. Uterus was retroflexed by a fibroid the size of a hen's egg, on the upper posterior aspect of the fundus. This was removed. A small fibroid located on posterior wall of uterus. Hence oöphorectomy. Result permanently good.
6 W.	R. S.	32	Jan. 28, 1891.		M.	3		Gonorrhœal pyosalpynx.	Removal of both ovaries and tubes.	No.		R.		On the fourth day after operation menstruation seemed to be at hand, and lasted four days. Made an excellent recovery, and has seen no show since.
7 B.	S. J.	21	Feb. 2, 1891.	S.				Gonorrhœal (double pyo-salpynx). Extensive adhesions.	Removal of both ovaries and tubes.	Yes.	Pus tube burst. Hæmorrhage very great.		D.	Patient died of sepsis on the third day. The whole of Douglass' cul-de-sac was denuded, and from this surface copious hæmorrhage ensued. Bleeding was arrested by packing with Iodoform gauze.
8 W.	S. A.	22	Feb. 9, 1891.		M.			Gonorrhœal salpingitis. Chronic ovaritis.	Removal of both ovaries and tubes.	No.		R.		Anæmia most pronounced; complexion waxy; general health very bad, so much so as to render doubtful the advisability of operation. The gravity of the case stated to friends. The results most satisfactory.
9 W.	S. B.	28	Feb. 22, 1891.		Widow.			Ovarian tumor.	Removal of tumor and other ovary.	No.	Slight stitch abscess.	R.		Made a complete recovery. Have seen her lately in good health. Has resumed her wonted weight and vigor.
10 W.	W. S.	50	Mar. 19, 1891.					Ovarian tumor. Peritonitis.	Removal of tumor and other ovary.	No.			D.	Patient called six weeks before operation, and was, in view of the great abdominal development, advised to accept immediate operation. When she arrived she was suffering with peritonitis. Death took place two hours after the operation, from surgical and chloroform shock.
11 W.	T. V. L.	48	Apr. 20, 1891.		M.			Fibro-cystic tumor of uterus.	Abdominal hysterectomy.	No..		R.		Incision 14½ inches. Tumor weighed 20 lbs.; its vertical circumference was 23½ inches and its transverse 22¾ inches. Treated stump extra peritoneally. Temperature did not reach beyond 99°, nor pulse below 80. Recovery was uninterrupted and complete.
12 W.	H. J.	21	Apr. 21, 1891.	S.				Chronic ovaritis. Dysmenorrhœa.	Removal of both ovaries.	No.		R.		Had been bed-ridden for over six mos.; had been a sufferer with Dysmenorroœa since 17, when her menstruation began. She gained in weight, and was cheerful for a while, but relapsed into the same neurotic state as before operation. Improved physically, not mentally.
13 W.	S. M.	35	Apr. 26, 1891.		M.	5		Uterineretroflexion. Abscess involving right tube and ovary discharged through rectum. Painful mass on right side of pelvis.	Removal of both ovaries, including the cellulitic mass involving the right ovary.	No.		R.		Hæmorrhage readily controlled. Blood removed thoroughly by sponges which had been packed in cul-de-sac. No drainage, no flushing. Temperature did not rise above 100°. Stitches removed on tenth day. Recovery rapid. In 5 mos. has increased in weight from 130 lbs. at time of operation to 160 lbs. Health excellent.
14 W.	A. B.	23	May 9, 1891.	S.				Dysmenorrhœa. Anæmia. Metrorrhagia.	Removal of both ovaries and tubes.	No.		R.		A factory hand who had been compelled to quit work on account of ill-health. Has been able to resume work. Is in good health and spirits.
15 W.	S. E.	28	May 11, 1891.		M.	3		Ovarian tumor of right ovary; left ovary had a cyst in it containing 10 oz. fluid.	Removal of tumor and other ovary.	No.	Stitch Abscess.	R.		Made an excellent recovery, except as to the delay from the stitch abscess.
16 W.	W. A.	22	May 20, 1891.	S.				Chronic ovaritis. Dysmenorrhœa. Anæmia.	Removal of both ovaries and tubes.	No.	Stitch Abscess.	R.		Elevation of temperature combatted successfully by Salines. Two stitches removed on the fifth day, and the others on seventh day, because of redness around them. Superficial suppuration continued two weeks; healing rapid. Thorough recovery.
17 W.	S. K.	20	June 3, 1891.	S.				Epileptiform spasms. Dysmenorrhœa.	Removal of both ovaries and tubes.	No.		R.		Menstruation begun at 15; since then had been at every recurrence subject to fits. A number of distinguished nerve specialists in New York and elsewhere had treated her. Massage, electricity, drugs, all alike failed. Recovery from operation excellent. Cure incomplete.

BALTIMORE CITY HOSPITAL—ABDOMINAL SECTIONS.—CONTINUED.

No. and color.	Name.	Age.	Date.	Single.	Married.	Children.	Miscarried.	Disease.	Operation.	Drain.	Complications.	Recovered.	Died.	Remarks.
18 W.	V. M.	18	June 18, 1891.	S.				Acute mania. Dysmenorrhœa.	Removal of both ovaries and tubes.	No.			D.	*Had periodical attacks of Mania, with menses* since first appearance at 15. Six mos. ago was in an insane asylum. A few days after operation acute mania set in. She died the eleventh day after operation.
19 W.	S. M. L.	25	July 4, 1891.		M.			Traumatic peritonitis. Retroflexion. Displaced and diseased ovary.	Removal of both ovaries and tubes.	No.	Cystitis.	R.		Uterus retroflexed and bound by adhesions in *its malposition. Had cystitis.* Was always in pain. Menstruation painful and irregular. Cause; a fall when 14 years old. Recovery complete.
20 B.	D. K.	42	July 18, 1891.	S.				Ovarian tumor.	Removal of tumor and the other ovary.	No.	Stitch abscess.	R.		Patient noticed the growth six years ago, but did not know what it was. It was claimed by her that menopause came on at 36, and growth was more rapid the last three years. When she left hospital the abscess had not completely healed. Recovery *is complete.*
21 W.	W. A. S.	16	July 29, 1891.	S.				Ovarian tumor.	Removal of tumor and the other ovary.	No.	Stitch abscess.	R.		Patient noticed her abdomen was growing larger when she was 12. She had her menses last winter several times, but the flow was scanty. Her periods were irregular. Had an uninterrupted and rapid recovery.
22 W.	L. C.	25	Sept. 1, 1881.		M.			Cancer of left ovary involving the intestines.	Exploratory laparotomy.	No.		R.		Found a large cancerous mass in the left side, involving the liver as well as ovary. Closed the abdomen. Recovered sufficiently to go home.
23 W.	W. E.	23	Sept. 2, 1891.		M.			Both ovaries cystic. The left mass of cysts displaced in posterior cul-de-sac, and adherent.	Removal of both ovaries and a fœtus of 6 weeks.	No.	Pregnancy.	R.		Examination disclosed enlarged and cystic ovaries. Her physician had probed the uterus and was satisfied she could not be pregnant. She had had three miscarriages in the first-third of gestation. Determined after conference to remove the fœtus and continue operation. Result excellent.
24 B.	R. R.	27	Sept. 9, 1891.	S.				Intramural fibroids. Dysmenorrhœa, menorrhagia *alarming in extent.*	Removal of the ovaries.	No.	Stitch abscess.	R.		*Had expected to do a hysterectomy*, as uterus was large and it was unlikely that the ovaries could be reached; but both were in front and easily removed. Patient had some metro-peritonitis for several days, but made an excellent recovery.
25 W.	R. A.	33	Sept. 24, 1891.		M.	2	1	Retroflexion. Prolapsed ovaries. Dysmenorrhœa.	Oöphorectomy. Hysterrorrhaphy.	No.	Stitch abscess.	R.		Had suffered for years with retroflexion and prolapse of ovary; was disabled for all duty. Removed both ovaries and stitched the uterus *to the abdominal wall. Made a good recovery.*
26 W.	M. O.	33	Sept. 26, 1891.		Widow.			Peritonitis, Hematocele, Abortion.	Exploratory laparotomy.	No.		R.		Time of operation, temperature 102°. It began to fall at once. In three weeks the exudates were removed. Has made a perfect recovery.
27 B.	C. M.	39	Oct. 8, 1891.			1	1	Chronic ovaritis, Dysmenorrhœa.	Oöphorectomy.	No.		R.		Nothing worthy of comment, save relief from pain and promise of complete recovery.
28 W.	S. M. L.	25	Oct. 18, 1891.		M.			Cyst in broad ligature.	Laparotomy for removal of cyst.	No.		R.		Same case as operated on July 4, 1892. Cyst of broad ligament containing serum removed. Entire relief from pain. Recovery uninterrupted. Is now sitting up.
29 W.	G. L.	32	Oct. 18, 1891.		M.		1	Extra-uterine pregnancy.	Laparotomy, removal of sac, with placenta and both ovaries.	Yes.	Mania of a mild type.	R.		Four months had scanty, irregular, and painful menstruation. She was compelled to go to bed one month ago. On opening abdomen a large sac in left iliac region strongly adherent to surrounding structures involving tube and ovary. Microscopic examination showed placental tissue: drain tube used 24 hours. Recovered.
30 W.	B. L.	37	Oct. 25, 1891.		M.	4	1	Pyo-salpynx.	Removal of both ovaries and both tubes.	No.		R.		Had a clear history of gonorrhœa; was under dispensary treatment three mos. Flushing was used; no drainage. Recovered without unfavorable conditions.
31 B.	B. M.	32	Oct. 27, 1891.		M.		1	Ovarian abscess.	Extirpation of abscess sac and other ovary and tube.	Yes.	Stitch abscess.	R.		Sac filled pelvis nearly to the umbilicus: was at every point adherent to uterus, intestines, or abdominal wall; was enucleated by the hands rather than the knife. Drainage tube used 24 hours. Her recovery is regarded as phenomenal.
32	W. M.	37	Oct. 29, 1891.		M.	3		Fibrocystic tumor of uterus.	Abdominal hysterectomy.	No.			D.	Tumor began to show five years ago. Since then has been suffering profuse hæmorrhages. Was supposed to be an ovarian tumor. Got through operation well. The stump secured by the Baker-Brown clamp. No bleeding. About the fifth day temperature up to 103°; pulse 150. Death took place on the seventh day from peritonitis.

I hoped to find the ovaries, due preparation was made for a hysterectomy. They were happily in front and were removed; not a drop of blood has appeared since the operation. She made a good recovery.

Case 5 was one of sub-peritoneal fibroids. The patient had been bed-ridden for six months, though sick and disqualified for all the duties of a wife for years. The uterus was retroflexed by a fibroma the size of a hen's egg, situated on the upper posterior part of the fundus. In addition to this there was a small intramural fibroid the size of a filbert, located on the posterior wall at the junction of the body and neck. Myomectomy was done, and both ovaries and tubes were removed; she made a good recovery.

HYSTERORRHAPHY.

In two cases, No. 1 and No. 25, hysterorrhaphy was performed after the removal of the appendages for retroflexion of the uterus with chronic ovaritis and dysmenorrhœa.

The operation by suturing through the anterior uterine wall may well be considered obsolete. The first case I performed on November 13th, last, suturing through the stump of the uterine appendages, without scraping or otherwise injuring the uterine wall. The outer part of the sutures were cut off at the end of two weeks, and the remaining parts allowed to fall back into the abdomen.

In the second case, No. 25, the sutures were simply made to pierce (without tying) the ovarian ligament and brought through the abdominal wall opposite their respective insertions about 1½ inches from the incision, and tied over a bridge of skin one-half inch wide. In two weeks they were removed by cutting one side and drawing them out entirely.

Both cases, when discharged, were in excellent condition. The uterus in each case was well secured in its rectified position, as attested by several competent examiners. Further time is necessary to establish the permanency and value of these operations.

CYSTIC DEGENERATION OF OVARY, COMPLICATED BY PREGNANCY.

Case 23.—M., 23 years old, has had no full term children, but three miscarriages, during the first third of gestation. Patient had been subjected to considerable local treatment without avail. Her present trouble with the left ovary had been recognized during the past three years. The possibility of pregnancy was broached, but her attending physician said that he had lately been making intra-uterine applications, and hence was confident she could not be pregnant.

On opening the abdomen, the diseased ovary was readily verified, but the uterus was unduly large and the cervix was dilated with parallel bar dilator, so as to explore its contents. A fœtus of six weeks was withdrawn, the ovaries were removed. The subsequent history of the case was uneventful save that recovery was rapid and complete. The ovary on left side was represented in the thickened portion of the wall of a cyst the size of a walnut.

EXTRA-UTERINE PREGNANCY IN A DOUBLE UTERUS, REMOVAL OF SAC AND THE REMAINING OVARY.

Case 30.—Age 32, had been married fifteen years, but was without offspring. Since girlhood she had been regular with menstruation. For four months past her menstruation has been scanty and irregular and her general health miserable. One month prior to the operation, she was compelled to go to bed. When the patient was first examined in consultation with Dr. Wm. Gombel, of Baltimore, her attending physician, there was a hard resistent mass occupying the left side of the pelvis, pressing upon the rectum and causing intolerable agony. Laparotomy was determined upon. A large encyted mass, the size of two fists, occupied the posterior and lateral regions of the pelvic basin, pushing the double uterus to the opposite side. At the outset, in enucleating it, the blood contents escaped; the sac was shelled out and the pedicle ligatured. The right ovary was removed. The abdomen was flushed, the drainage tube inserted and the abdomen closed.

The double uterus was realized by sight as well as touch, it having been held up in the incision for a satisfactory recognition by all present. There were two distinct fundi, with deep sulcus between them. The cervix was single. The drainage tube was taken out in twenty-four hours. The patient during about ten days, although doing well physically, had an attack of mania. Providentially she was at no time unmanageable, though she was watched with the most assiduous attention by her nurse. She entertained two vagaries, and aside from them, was sane and logical. One was the constant dread that she was to be operated on by the doctor again, and when either of her attendants entered the room she was frantic with fright. The other departure was that she could hear her family talking in the next room. She would answer their supposed questions and plead pitifully that they be admitted. She is now perfectly sane, has gotten well of her stitch abscess, which followed the drain tube, and is out of harm's way.

A microscopic examination of the tissue of the sac, showed it to be placental.

STITCH ABSCESS.

This complication occurred nine times, a much larger number relatively than I have seen recorded heretofore; while no case proved disastrous, several were exceedingly annoying in delaying patients in hospital. They occur most frequently in cases where the drain tube has been used. The early opening of the abdominal dressings for any purpose, favors their occurrence. When the dressings remained intact for seven days there seemed to be greatest immunity from the stitch abscess. Dr. Welch says: "A coccus, which may appropriately be called the staphylococcus epidermus albus, is a nearly, if not quite constant inhabitant of the epidermis, lying both superficially and also deeper than can be reached by present methods of disinfection of the skin. The coccus is found frequently in aseptic wounds. It may be the cause of disturbances, usually of a relatively slight degree, in the healing of the wound, especially when drainage tubes are inserted. It is the most common cause of stitch abscesses in wounds treated aseptically and antiseptically.

DRAINAGE IN ABDOMINAL SURGERY:

Drainage was resorted to in but three cases during the year.

Case 2.—Ovarian and dermoid cyst—had a drainage tube in five or six days, and I am convinced it retarded her convalescence.

Case 28.—Extra uterine pregnancy—had a tube in less than twenty four hours. If I may judge of the necessity for it by the quantity or quality of the discharge through it, I should say it did no good. A small superficial abscess at the entrance of tube followed its withdrawal.

Case 32.—Ovarian abscess—had a drain tube in about twenty four hours. An abscess occurred at the site of its entrance. The quart of pus which was saculated in this case, was removed without an atomic part of it touching the peritoneum or the wounded parts, otherwise her fate would have been sealed, as was the case in No. 7, where the pus tube burst and death ensued on the third day of peritonitis. Even in such a case as the latter, the most we could do, would be to thoroughly flush out the abdomen.

I am of the opinion that there is even too much flushing done; it is but seldom called for. A plentiful supply of fine properly prepared *elephant-ear* sponges, will do away with flushings in most cases and remove the necessity for drainage. They are efficient helps in keeping the abdomen free from infection. They can be utilized in keeping back the intestines, in occupying the cul-de-sac, in positions below the pedicle, in taking up blood or secretions, in staunching hæmorrhage, in separating adhesions, in protecting the intestines while closing the abdomen. The assidious personal attention of certain workers using the drain tubes, has caused them to escape the disasters, which have befallen the less careful and less skilful surgeons.

Nature's plan for curing the unsightly rents the surgeon makes when he opens the abdominal cavity, *is to seal hermetically the sacred cavity of the peritoneum*, in twenty-four hours. This kindly and providentially comports with its sensitiveness and its fitness for the cultivation of germs of disease. Does not this prompt sealing of the peritoneum speak with unmistakable logic to the point, of striving hard for an aseptic operation and for securing immediate and absolute closure?

The oft repeated removal of the dressings of the patulous drainage tube must of necessity be a very great danger; surely it favors decomposition and invites germs. All surgeons are aware that after an anæsthetic, restlessness and jactitations are not wholly restrainable. It is easy to conceive how physical injury may accrue to the patient during this critical time, from these not at all innocent, yet smooth glass tubes.

I believe drainage is doing more harm than good, and therefore ought to be abandoned by the abdominal surgeon.

There is a dual personality as well as power concerned in all surgical work. The one is the surgeon, *who skilfully meets and disposes of the crises in the* more mechanical part of the work and therefore receives the plaudits of the multitude, the other, is the influence behind the throne, more potent than the throne itself, which reaches beyond the eye, the touch and the knife. I scarcely need say it is the modest, yet oft-despised laboratory physician, who is teaching us the hidden leaven of disease. Let us give him grateful recognition, for the pivotal facts and secret springs in recent surgical success. When he says bruised tissue is a paragon field for the cultivation of infected germs, let us heed the warning and cast aside the drainage tube.

Dr. Parkes says as to drainage: "Views and practices concerning drainage have materially changed even since the antiseptic era began. Our predecessors drained to permit escape of pus, which they knew would form. Until lately we have drained in order to prevent its formation. We seem now to be on the eve of an era when we need to drain but little or not at all. We resort to drainage now only of necessity, in septic or infected cases. In other cases we drain mainly from habit, or from fear. Indeed, when we *start afresh*, as it were, without previous infection, the practice of drainage is a confession of fear or of weakness, both of which are alike unscientific and unfortunate. It even seems to me that in many cases where all other aseptic requirements have been met, we do much more harm *than good by the use of* drains."

THE DRINK PROBLEM FROM A MEDICAL POINT OF VIEW.

BY FREDERICK HORNER, M. D.,

OF THE U. S. NAVY.

The definition of disease is "any alteration from a perfect state of health." When it pervades the whole system, as fever does, it is called a general disease: when it affects a tissue or special organ, disease is partial or local. When alcohol induces delirium-tremens, or *mania a potu*, inebriety, as a disease, answers to the first definition, and when inductive of gastritis, Bright's disease, insanity, etc., the second definition is applicable. The term inebriety, or alcoholism, has assuredly been adopted during the present century as designative, in medical nomenclature, of a disease of the human body. The incredulous may demand in what tissue or vital organs of the body is located the disease, and may require of us to state in medical, physiological and pathological terms the signs, symptoms and effects of this disease. In reply, the statement, based upon facts, to be presented is made that nerve and brain tissue and the vital *fluid—the blood—are the seats of the* disease of inebriety. While the exact locality may be imperceptible to the senses the microscope does reveal molecular changes in the nerve tissues and excess of fibrine in the blood;[1] the scalpel point may fail to touch the exact spot of brain tissue affected to show where the disease begins; but this cannot always be done in cases of insanity, epilepsy, or paralysis. In coup de soleil, and where individuals perish by lightning, the effects may be noted, such as the loss of consciousness, insensibility and fluidity of the blood, and yet the subtle cause producing instantaneous death may not leave a trace of harm or the evidence of lesion upon a single tissue or organ of the body. Again, a consumptive or cancer-stricken father or mother may have neither phthisis nor cancer developed in their offspring by heredity, and yet by the irreversible law of ativism these hereditary diseases will appear in some collateral descendant in another generation as surely as the iniquity of the fathers, according to the Bible, are visited upon the children. Some authorities define inebriety to be a disease of the nervous system, allied to insanity, characterized by an overwhelming impulse or *craze for intoxicants* —the effect of the excessive use of alcohol exerts a toxic effect on certain organs, beyond doubt—e. g., degenerative changes of the nerve substance of the brain, the victim loses the power of muscular coordination, there is paralysis of the will and perversion of the moral faculties. Prof. H. Newell Martin, of the Johns Hopkin's University, says "it is not strange that the liver often becomes diseased from a man taking alcoholic drinks, followed by fibrous degeneration; the true liver substance is crushed and killed, and what remains is a shrunken, hard, rough mass, well known to the pathologist as 'hob-nailed' liver. The mucous membrane lining the air passages is in a congested state. There is, also," he adds, "a peculiar form of consumption which is rapidly fatal, and is found only in drunkards." To two eminent American physicians, Drs. Albert Day and T. D. Crothers, may be awarded the credit of establishing beyond all questioning, the facts to prove that inebriety is a disease, and that "all the symptoms are incidental to the toxic effects of alcohol, marked by psychical and pathological changes and the inability of the patient to cease the use of spirits." Dr. Crothers asserts nerve degeneration occurs, then follow functional and organic disturbances. From hereditary causes there may be further proofs of organic degenerations, marked by an anæmia and a sudden insane impulse for intoxicants. In summing up the statistics this profound expounder of the subject adds: "Inebriety is the active cause of from 15 to 50 per cent. of all insanity, from 30 to 80 per cent. of all idiocy, from 60 to 90 per cent. of all pauperism, and from 50 to 85 per cent. of all crime." Dr. Albert Day, of Boston, in his late thirty-third annual report of the Washingtonian Home for the treatment of inebriates, says: "On the individual the effects of vicious alcoholic indulgence is disease of the body. Sooner or later it must come. Disease of the mind is not far off. It may be delirium or insanity; the moral sense is blunted. The man is dying, and if not restrained will soon be dead. Drunkenness is the scourge of our land, and the main secondary cause of its spread most certainly seems to be the false dietetic place of alcohol. Put back this perilous drug whence it came—into the medicine-chest and laboratory—and then a master-stroke will have been achieved to lessen the evil. The votaries of folly who spend the better half of the night in the halls of Bacchus and Terpsichore will at last dance on scorpions and swim in the river of misery and death, instead of pleasure. The effects of intemperance upon the patriotism of a nation is neither obscure nor doubtful. The man might as well talk of justice and mercy who robs and murders on the highways as he whose example is pestiferous and whose presence withers the tender charities of life and perpetuates weeping and woe. A nation of drunkards and drunkard-makers would constitute a hell." After a warning to the general public relating to the danger in following the drinking customs of so-called polite and refined society which now so generally prevail, Dr. Day concludes. that "the interests of religion, our spiritual welfare and happiness, the happiness and safety of our families and of succeeding generations demand from us unceasing sacrifice to remove this enemy to good government, morals, and truth." In a monograph, "Our country, its possible future and its present crisis," by Dr. Josiah Strong, the author shows by reliable statistics that the use of intoxicants is more dangerous for this generation than it has been for any preceding one, and he asserts his belief that civilization must either destroy the liquor traffic, or be destroyed by it. "In the Philadelphia Hospital Dr. Formad found, in the dead-house autopsies, that of two hundred and fifty chronic alcoholists nearly 90 per cent. had fatty degeneration of the liver; 60 per cent. had congestion, or a dropsical state of the brain; the same number an inflamed or degenerated stomach, while not quite 1 per cent. had normal kidneys. Such eminent scientists as Richardson, Skae, Forbes, Winslow. Anstie, Parrish, Dodge, and others, confirm the fact that inebriety is in itself a form of insanity, and like all hereditary diseases is transmitted from parent to child as much as scrofula, gout, or consumption, and gives the least hope of a permanent cure unless treated according to the suggestions of modern medical science." Dr. Davis, of Chicago, on the occasion of the late National Temperance Convention on Staten Island, said: "Alcohol is a poison, and when taken into the system it is now pretty well demonstrated is not assimilated, and while passing through the body it disturbs the various physiological processes, and is finally thrown off through the organs of excretion unchanged. Hence, if not assimilated it cannot be a food, and as it disturbs every physiological process, it cannot be a medicine. Therefore, if alcohol is *not* nutritious, and serves no purpose as a therapeutical agent, then mankind should be so instructed, and its promiscuous use abandoned. This work can alone be done by the medical profession."

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[1] There are also marked changes in the muscular structure of the heart, loss of power, attended by fatty degeneration, sometimes completely surrounding this vital organ with a dense layer of fat, and in extreme cases the fibres of the muscles of the heart turn to fat, inductive of dyspnœa, and the victim ultimately dies of dropsy

In connection with the physiological effects of one form of alcohol, viz.: chloroform, upon the brain, nervous and circulatory systems, a striking illustration was furnished by your ex-president, Dr. Bedford Brown, and published in 1860 in the *American Journal of the Medical Sciences.* Case of extensive compound fracture of the cranium in the person of a boy about ten years old, who was kicked by a horse, producing a compound fracture, with depression attended by copious hæmorrhage, with portions of lacerated brain adhering to the edges of the wound. The effect of chloroform in this case was to arrest the bleeding and diminish the pulsations of the brain, whose surface became pale and shrunken. Dr. Brown was thus led to conclude that it is an error to suppose that the congestion detected in fatal cases from the use of anæsthetic forms of the alcohol compounds is the cause of the fatality, but is rather the consequence of their toxic effects on the nerves presiding over the processes of respiration and circulation.

As to the unique surgical importance of Dr. Brown's case it will compare favorably with St. Martin's, reported by Beaumont, and to us considering the topic of inebriety, is suggestive how death so often occurs suddenly to the drunkard, which could not be otherwise explained. Surely the investigator in the sphere of the subject of inebriety, its cause, prevention and cure will become a great benefactor of mankind.

The treatment of inebriety is involved in the question of the drink problem from a medical standpoint, and here the homely adage applies: an ounce of prevention is better than a pound of cure. During my active naval medical service, I recall that in 1859, by act of Congress, the grog ration of the seamen of the American navies was abolished; sailors were allowed an equivalent in money, 25 cents per diem, for this ration, and since, the sailor's condition, physical and moral, has been improved; he no longer is tempted to acquire the habit of drinking. A like blessing has come to the people of Virginia, as at my town of Marshall, where under local option law all the saloons have been closed. The physician practices a like precaution to shield his patient from maniacal, if not criminal suicide, by removing the vial of laudanum from his bedside, and as Dr. Crothers aptly remarks, puts him in quarantine, where diet, medicines, baths, exercise, with all other means can be applied with military exactness, regulating his mental and physical surroundings, along with the use of appropriate drugs, the bromides, phenacetine tonics, calomel globules, etc. Coffee, tea and milk should be given often and early, especially in the morning. "Fluid beef" as prepared by the Nutriment Company, of Chicago, in the form of bouillon or soup may be considered a most palatable form of diet. The coffee palaces have already accomplished wonders in England, to decrease the use of alcohol in that country, and to diminish the craving for intoxicants. Dr. Crothers informs us that to-day there are over a hundred asylums and hospitals in the world for the treatment of drunkards, but, as yet, not one in Virginia, and not one for the treatment of the inebriates of our army and navy. In proof of the needs of the latter, in the report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy for 1890, Medical Director Albert L. Gihon reports a death from suicide, the result of a self-inflicted wound upon the throat by a seaman suffering a furious attack of delirium tremens, as the consequence of a six days' debauch. Had this man been in a hospital for inebriates, he might not have come to so miserable an end. Finally, are we not right to assert, as to this question of the drink problem and its solution, that there is present now in America, a great battle going on, to decide whether the forces that are to govern in the affairs of our nation are to emanate from the homes or the saloons? If now the purpose of our government be to promote the general welfare and to ensure the public health, the home and not the saloon influence should predominate.

Dr. Benjamin Rush said that "a people corrupted by strong drink cannot long be a free people," and Dr. Hunter McGuire, in his address in Philadelphia on the "Progress of Medical Science, etc.," can exult and gaze with admiring enthusiasm on the efforts made by the medical profession during this nineteenth century to improve mankind, and to establish hospitals, dispensaries, homes for the maimed, and in every way encourage the usefulness of medicine. And will the members of the medical profession not seek to stay the curse of inebriety, and by example and teaching in the midst of their several communities, make another advance, as the American Medical Temperance Association, the British Medical Society, and the Association for the Study and Cure of Inebriety, invite you to do. They would have you to cooperate with them "to study and investigate the action of alcohol, as both a beverage and medicine, to determine the facts concerning alcohol; not to become propagandists, as the appeal urges, but as scientists eager to obtain facts and clinical experience, and as the only competent authority to determine the alcoholic problem," yea, for even a stronger motive, because, according to Dr. Carpenter, in his article in the *Review*, physicians, among the professions, head the list of the greatest number of inebriates. We may become the instruments to save some of our medical brethren from the wretched life and death of the drunkard. While you may never be called upon to encounter the pestilence as it occurred at Norfolk, Memphis and Shreveport, or to meet even worse enemies, as did Livingstone, Kane and Ambler, you may rescue some fallen brother, and restore him to a life of usefulness here and happiness hereafter.

TWO CASES OF TRAUMATIC TETANUS.

BY C. M. FENN, M.D.,
OF SAN DIEGO, CAL.

Suggested by your recent rèsumè and editorials upon the Etiology of Tetanus, I venture to recall two cases of the traumatic variety, which in the matter of treatment seem to have been in line at least with some of the more recent investigations and conclusions.

At the period of their occurrence, a quarter of a century ago, Gross and others regarded all treatment of the "obstinate disease" as empirical. Upon this subject he says, "there are, I presume, few surgeons who would be found to be so venturesome as to remove a limb on the approach of such a disease, and *none would certainly be foolish enough* (italics mine) *to attempt the expedient after it is fully established*."

It is true the bacterial origin of the malady had not then been determined, if suspected, but the writer believed that a poison or irritant connected with the wound was responsible for the tetanic paroxysms and that early isolation of the diseased tissues was indicated. Possibly he builded better than he knew. But even now, with our present knowledge of a period of circulation, so to speak, and that the bacillus *per se* does nor enter the circulation, should we not more frequently employ the scalpel as an adjunct, at least, to anti-septic measures?

In case one, a little toe had been split by contact with a sailor's knife left on the deck of a ship. Tetanic symptoms were well marked and were not influenced by excessive doses of cannabis indica, a much vaunted remedy at that period. Quadruple doses were taken by mistake.

Rapid amelioration of the symptoms and ultimate recovery followed amputation of the phalanges of the offending toe.

The second case was also typical in its aspects, opisthotonos and other pathognomonic features following the slightest noise or draught of air. A blow from a wine bottle shattered had produced a lacerated wound of the tissues overlying the radial side of right forearm. The nature of the injury, coupled with intemperate habits of the patient, made it an unpromising case.

A semicircular incision to the bone was made on the proximal side of the injury and the two wounds were frequently dusted with sulphate of morphine. In addition to this, both were covered with a warm water dressing to which a solution of permanganate of potash was added betimes. These, the main features of treatment, were attended with success.

In the light of modern research we learn that a bacillus, known as Nicolaier's, is always present in typical tetanus; and that pure cultures of it can produce the disease. It is further stated that the bacillus loses its virulence in the presence of oxygen. Is not this true of many animal poisons and does it not explain the potency of potassium permanganate, which contains so large a measure of oxygen and parts with it so readily? A recent case of rattlesnake poisoning in this vicinity, yielded quickly to the application of a strong solution of this salt to the wound.

In the cases cited no special medication was used to counteract the effect of the ptomaines unless the topical application of morphine might be so considered.

Having removed the cause, the bacillus, the question arises, what antidote have we as against the ptomaines or toxines?

Concurring in your statement that the scientific completeness of the etiology of tetanus is exceptional, let us hope that THE JOURNAL will continue to discuss the subject with more particular reference to its treatment.

THE INFLUENCE OF THE RECLINING POSTURE IN FEVERS UPON THE PRODUCTION OF OTITIS MEDIA.

Read at a meeting of the Milwaukee Medical Society, Dec. 22, 1891.

BY H. V. WÜRDEMANN, M.D.,
OF MILWAUKEE, WIS.

It is generally accepted as a truism that the most frequent mode for propagation of an inflammation from the naso-pharynx to the middle ear is by direct extension along the mucous lining of the Eustachian tube. Any hindrance to drainage of the middle ear and tube occasioned by occlusion of the nose or pharynx is also recognized as a prolific cause of Eustachian salpingitis and otitis media. This is particularly marked in children, as their naso-pharynx is quite small in proportion to that of adults. Hence, the relatively greater number of acute aural affections in young people.

While these are the usual methods, a factor which may be overlooked is sometimes the actual cause, and in other cases an adjuvant of the inflammatory process. The recumbant position in any febrile disease, accompanied by inflammation of the upper air passages, leads to the accumulation of secretion from the nose and mouth in the naso-pharynx, from which it is with difficulty expelled. The influence of gravitation is naturally most marked in the dorsal decubitus, a position usually assumed by very weak patients. The irritation induced by the decomposition of the retained mucus around the mouths of the Eustachian tubes and their mechanical stoppage is an efficient cause of the aural complication. [See also Burnett.[1]]

To repeat from a former article:[2] Even "normal mucus from the nose forms a fertile pabulum for the growth of microörganisms." Secretion remaining in the naso-pharynx soon decomposes, giving rise to suppurative inflammation of the neighboring delicate membrane lining the aural passages. "Wright[3] examined the nasal secretion of 10 healthy persons of different ages for bacteria. There were found in six cases, staphylococcus pyogenes albus, aureus and citreus; in three, micrococcus flavus desidiens; in one, bacterium tactis ærogenes; in one, pencillium glaucum; in one, micrococcus cereus flavus; in one, micrococcus tetragenus; and in three, some undetermined species. The numerical preponderance of suppurative cocci agrees with the results of others." Of course decomposed mucus is even more septic.

As it is often advisable that the patient be confined to bed in the course of la grippe or the exanthemata, this cause in the production of the aural affection must necessarily obtain. It is evident, however, that otitis media would not be so common a sequel of such diseases if some attention, in these cases, were paid to the removal of secretion from the naso-pharynx by a warm spray of Dobell's solution, salt and water, or some such simple means.

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A SKETCH OF MR. LAWSON TAIT AND HIS WORK.

BY FRED BYRON ROBINSON, B. S., M. D.,
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PROFESSOR OF GYNECOLOGY IN CHICAGO POST-GRADUATE MEDICAL SCHOOL.

In the following sketch an attempt will be made to present to the American physician some information of the life and work of Mr. Lawson Tait. The suggestion arose from the oft-repeated inquiry, which I have heard, to know more of the man who has written so well and worked so successfully.

At the time the subject of this sketch appeared on the field of practical surgery the harvest was ripe, and his genius, which was untiring energy, quickly gathered the fruit that had long waited a reaper. The medical profession have gladly welcomed the gathering of his golden sheaves, which have grown into ripened stacks. Mr. Lawson Tait was born in 1845, in Edinburgh, Scotland. He is the only surviving son of Archibald Campbell Tait. His parents died many years ago. Mr. Tait was admitted into the Heriot Hospital school at 7 years of age. He early showed marked mental capacity, and while at this school he won a scholarship which entitled him to be sent to the University of Edinburgh, where he studied the arts and sciences, and finally medicine. He began the study of medicine at 15 years of age, and was graduated at 21 as a Fellow of the Royal College of Surgeons of Scotland. During his medical studies he was under the training of a young surgeon of much promise, Alexander McKenzie Edwards, who was the favorite pupil of Sir William Fergusson. But Mr. Tait will be best remembered as the favorite student of Sir James Y. Simpson. Simpson was the greatest gynecologist of his day, and it is not strange that Mr. Tait should imbibe the views and be impressed with the teaching of a great man like Simpson. Simpson was one of the great original thinkers of his age, and also a practical observer, and this logical force of circumstances destined him to be a foremost leader in gynecology. Mr. Tait seems not only to have grasped Simpson's teachings with benefit, but immediately carried the key of progress into new fields. About this time a sad event occurred to the world, as well, no doubt, to the hopes and aspirations of Mr. Tait. It was the sudden death of the famous Simpson. With unfeigned sorrow the medical world beheld this great man fold his cloak of death about him and pass the gate that stands ajar for all. As Mr. Tait's beloved teacher was dead, he decided to leave Edinburgh. He went to reside at Wakefield as house surgeon to a hospital. We will now pause to consider some important matters in 1867, when Mr. Tait was 22 years of age, and beginning his surgical work in the Wakefield hospital. Up to 1860 the condition of abdominal surgery was not very encouraging. The best statistics which I have been able to observe records that ovariotomy was performed some four hundred times from the days of McDowell until 1860. The mortality was at least 45 per cent. Such frightful mortality would appall even a stout heart. Almost half the women died from the operation. From 1860 to 1866 Mr. Tait was a student in a school known the world over for its original and progressive men. In short, history hints that McDowell himself received the suggestion of opening the abdomen to remove tumors from the Bells of Edinburgh, where he was listening to medical lectures. From the Bells the views passed on to Lizars, so that the Edinburgh school was in the head and front rank of abdominal work. Abdominal section must have been carefully discussed by the professors of the school from 1860 onward. Mr. Tait states somewhere in his writing that while he was a student their boyish debates often turned on the question, "Is ovariotomy justifiable?" and he notes that the conservative element among the students was so strong that the decision was nearly always against performing the operation. Two points can be gleaned from students' debates. The first is, that they will debate questions which their teachers discuss; the second is, that the students will decide as their teachers have instructed them. So we can reasonably conclude that during Mr. Tait's student days the Edinburgh school held an unfavorable view toward ovariotomy. But whether Mr. Tait resolved to follow the course laid down by his celebrated teachers or not, we find that circumstances at the Wakefield hospital led him into performing ovariotomy. It appears that at this institution Mr. Tait was allowed, by grace of his seniors, exercise of judgment as to the performance of operations. Into the hospital came women with large tumors, which were carrying them swiftly onward and swiftly downward. These women appealed to Mr. Tait for aid. Mr. Tait, seeing that the cases were doomed without surgical interference, operated, I understand, on some eight to ten during three years. The report runs that he saved about two-thirds of the cases. A mortality of only one-third was a vast improvement over other years. In 1870 it appears that Mr. Tait had decided to follow the surgical diseases of women for a life-work. He concluded to remove to Birmingham for a wider field of labor. Just before leaving Wakefield he married a lady of that place. Of her the least we can say is that she is a gentle and sweet woman. Her amiable disposition is her characteristic, and she wins warm friends wherever she goes. She is a pleasant and an entertaining conversationalist. Mrs. and Mr. Tait are a typical example of a happily wedded couple. They are both exceedingly fond of and attentive to each other. They are the dearest kind of friends, and spend much time together in driving and traveling. Our ideal of the man is raised when we see him bestowing such devotion on the companion of twenty years.

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[1] Burnett, Chas. H., "Acute inflam. of the Middle Ear." Internat. Clinics, July 1891, p. 345.

[2] Würdemann, H. V., "Acute Suppur. Middle Ear and Facial Paral." Ophth. Record, Dec. 1891, p. 211.

[3] Wright, Bacteriol. World, July 1891, p. 525.

In the summer of 1870 Mr. Tait went to reside in Birmingham. As a young man of 25, he had shown himself to be possessed of courage. To this fearlessness I would call especial attention, as one of the characteristics of Mr. Tait. He had courage bold enough to follow out his convictions. His courage had already enabled him to save about two-thirds of his cases which were doomed without operation. He saved them by the dreaded abdominal section with its frightful mortality. Mr. Tait is a public-spirited man, and a few months after he arrived in the city he formed the acquaintance of George Dawson, a leading thinker of Birmingham. The acquaintance of this able man no doubt influenced Mr. Tait's life, for they were intimate and warm friends until Dawson's death, some years ago. Though Dawson was a regular officiating Congregational minister of wide reputation, and a frequent lecturer in different parts of the country, he established a newspaper called the *Morning News*, and Mr. Tait joined the staff. No doubt it would be interesting to read Mr. Tait's articles of twenty years ago, but we can conclude that the articles had originality and merit, or they never would have been accepted by Dawson, who was a keen critic and an exacting judge of journalistic work. We know personally from Mr. Tait's many kind references to the remarkably gifted Dawson that their friendship was a bright spot with happy memories. Such deep and long-continued friendship with gifted minds mold men's character by inscrutible increments. Mr. Tait had been in Birmingham but a short time when he demonstrated his wisdom by joining a movement to found a woman's hospital. With the accomplishment and success of this institution his name is inseparably identified.

We here consider Mr. Tait's position relative to operative gynecology. He has always been an active member of medical societies. He is a master of clear English expression, and when he debates he strikes right at the core of a subject. In fact, his remarks are direct and to the point. His statements appear in a declarative attitude, and each statement contains a challenge of accurateness. His enthusiasm is contagious and his aggressiveness stimulates opponents. He had not long lived in Birmingham before the medical societies began to listen to his new ideas on operative gynecology and journals began to print his views. It is needless to say that the English medical men met these new views with keen opposition, but curiously enough his new ideas were received with more liberality in the States. Three-quarters of a century will yet cover the great epochs of gynecology. The first epoch in this branch of medicine was when McDowell performed ovariotomy. Sir Spencer Wells made another era by his systematic labors in abdominal surgery. A distinct gynecological epoch arose when Sims began to pull back the perineum with his bent spoon. Another great epoch was created in gynecology in 1872, when Battey, Tait and Hegar came forward almost simultaneously and independently with a new operation. Curiously enough, these men lived about as far apart as civilization would allow. The new operation was the removal of the uterine appendages. Battey, of Rome, Ga., in 1865 "conceived the idea of producing an artificial menopause, the remedy of disease." and published his views in 1872. On August 17, 1872. Battey successfully removed the appendages. Mr. Lawson Tait, in February, 1872, removed successfully an ovary with an abscess in it about the size of a pigeon's egg, and he claimed that it was the first record in surgery where a small ovary was removed for pain. On August 1, 1872, he successfully removed both ovaries for persistent hæmorrhage. In the early part of August, 1872, Hegar removed the appendages, but the patient died. The above record shows the remarkable coincidence of widely different men and operators, independently performing the same new operation in the same year and about the same time. As electricity differs in its application in telegraphy, in lighting, and in therapeutics, so the removal of the uterine appendages differed in its application to disease. This same operation by Battey, Tait and Hegar has progressed in three different directions with three different results. Battey's operation limited itself to the neuroses mainly; Tait's operation mainly involved the removal of the tubes, and Hegar's operation attempted to arrest the growth and hæmorrhage of myoma. The object of the operation was, 1, to remove organs incurably diseased (Tait); 2, to arrest menstruation (Battey); 3, to control uterine hæmorrhage (Hegar). From this time on Mr. Tait began to show his specimens at medical societies and to advocate the removal of diseased appendages. At first he met with little support and much incredulity. A very striking expression of the subject may be illustrated by a debate which occurred in London in 1881, in which Mr. Tait was endeavoring to show, by his numerous specimens obtained from operations, that pyosalpinx was not an uncommon disease. In this congress Sir Spencer Wells arose and said: "I have only seen one such case in my life. I suppose they all go to Birmingham."

In 1873 appeared his work on the pathology and treatment of the diseases of the ovaries. The production gained for him the Hasting gold medal prize. This prize was presented to him at the British Medical Association by Sir William Fergusson in 1873. His work on the ovaries is remarkably original. It shows a large amount of personal investigations. It has gone through four editions.

As the book appeared at a period of radical changes in the methods of treatment of ovarian disease it became very widely read. It no doubt materially modified the course of surgeons in a marked degree, and stimulated progress in pelvic surgery. His large experience with human ovaries enabled him to produce one of the most practical and valuable books on this subject. Mr. Tait made steady progress in gynecology, and in 1877 published his work on diseases of women. A second edition appeared in "Wood's Library" in 1879. This work at once placed him among the front rank of gynecologists. This book was bold, concise and original. Any reader could readily see that its author was progressive and practical. In his preface of that book, twelve years ago, he made a plea that any effort to extend an acquaintance with diseases of women should be received with patience. But I can well remember that the book did not entirely escape ridicule and abuse the first five years of existence. During the next five years it steadily gained in favor. I always looked on this book as being the most unique of its kind. It carried a contagious enthusiasm with it and had a very fertile power of inducing men to think. The work is not at all out of date, and can be still read with pleasure and profit. The book is systematic, and yet lacks dry classification. It is interesting to note that the author has progressively modified some of his opinions through increased experience. The work is vigorously written and is a typical example of a man's own experience and views put in a condensed and attractive form.

(*To be Continued.*)

The use of cocaine in the urethra is attended with more risk than when applied to any other part of the body. It should be positively forbidden in the recently cut or denuded urethra.—*Ex.*

The International Dermatological Congress of 1892 will meet in Vienna, on September 5th to 10th. Dr. Prince A. Morrow has been appointed secretary of the Congress for North America.

DOMESTIC CORRESPONDENCE.

PHILADELPHIA LETTER.

The College of Physicians of Philadelphia, held its annual meeting January 6th, for the election of officers. Dr. S. Weir Mitchell was re-elected President, Dr. J. M. DaCosta, Vice-President; Dr. Chas. W. Dulles, Secretary; Dr. Charles Stewart Wurts, Treasurer, and Dr. Frederick P. Henry, Honorary Librarian, for the year 1892.

The Directory for Nurses has maintained its successful course during the past year, paying all expenses and contributing a surplus to the expenses of the College. During the year, special meetings devoted to Ophthalmology were held by Fellows of the College interested in this department, at which valuable papers were read, and patients and specimens were exhibited. At an early date, it is expected that a number of Sections of the College will be formed for the advancement of special departments of medicine, as the Council has this now under consideration. At this meeting, a communication was read by the Secretary, contributed by Dr. Gregorio Fedell, of Rome, Italy, entitled "A Rare Type of Malarial Fever," the author believing that the malarial manifestations observed by him in the reported cases constituted a peculiar type of the affection, which was not curable by quinine alone, and only yielded to a combination of quinine, zedoary root, camphor and ammonia.

Dr. Frederick A. Packard read a report of "Cases of Acromegaly," and presented a patient with enlargement of bones, constant headache, morbid somnolence, and the characteristic appearances of this interesting affection which has been termed "Maladie de Marie."

A specimen was exhibited of acute lepto-meningitis, which, from the general distribution of lymph over the convexity of the hemispheres and the base, and over the cerebellum, and from the clinical history was considered by Dr. Frank Woodbury. who presented the specimen, as infectious in origin and probably caused by influenza. The patient was 25 years of age, single; he was a robust man, whose work was that of stone cutting, which kept him out of doors. Upon returning from his daily work in his usual health, he was seized, Dec. 24th, with a chill, severe headache, backache, vomiting, fever and delirium. He was brought into the Medico-Chirurgical Hospital on the fourth day, and died two days later. There was a temperature of 104° on admission in the afternoon, but, after the administration of two ten grain doses of acetanilid and applying ice to the head, it fell to 100°. In the morning it again rose to 103½° and was 102½° the same evening; during the night he died. There was no eruption upon his body. While under observation he was actively delirious, talking and trying to leave his bed; he was very deaf in both ears, and his left eye was insensitive to light; pupils moderately contracted and sluggish with very little response to the light. Dr. Woodbury believed that the existing epidemic might be fairly assumed to be the cause of the lepto-meningitis, since pneumonia is frequent in influenza, and there is a close relationship between the microbic etiology of pneumonia and meningitis. Moreover, the ordinary causes of meningitis were excluded in this case. He considered it almost identical in appearance with the lesions of cerebro-spinal fever, in autopsies made by him in 1873; and this is of especial interest since the pathological relations of influenza are by no means established, and the possibility of an outbreak of cerebro-spinal fever following influenza has already been suggested. The exceptionally mild and damp weather during December was very favorable to the prevalence of malaria and infectious diseases.

Dr. Turner, Registrar of the City Board of Health, has just issued his annual report, for 1890. In it a largely increased mortality is shown towards the end of the year.

Dr. Turner states that during the past five weeks, there have been in this city, 199 deaths from the grip alone; that is, fifty-five more victims than are credited to influenza during the epidemic of 1890. About 1,300 deaths were caused by it in a period of seven weeks during the early period of that year. From the 1st of December to January 2, there were 1,504 deaths from influenza and other causes which develop from it, and which are made more pronounced and dangerous by reason of the prevalence of influenza, such as pneumonia, consumption, bronchitis, heart disease, old age and paralysis.

The following table will show the ravages made among the very young and the aged during the past five weeks by influenza and other causes which it influences:

NUMBER OF DEATHS AT DIFFERENT AGES,.

From Infancy to 100 years.

Cause of Death.	Under 10 Years.	10 to 15	15 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	T'ls from Causes.
Influenza.	22	1	0	3	7	18	16	35	62	29	5	198
Pneumonia . . .	155	4	5	25	44	53	66	91	93	40	2	578
Consumption . .	4	3	24	88	58	42	85	19	11	0	0	284
Old Age	0	0	0	0	0	0	0	8	34	56	8	106
Bronchitis	59	0	1	1	3	2	8	17	16	7	1	115
Heart Disease . .	12	1	5	5	14	11	27	29	46	11	0	167
Paralysis.	3	0	0	1	2	9	16	19	6	0	0	56
Totals at different ages . . .	255	9	35	123	128	188	168	218	258	146	16	1101

From these seven causes alone, Philadelphia has had an average death rate during those five weeks of 300 4-5, or almost as large as the rate from all causes during October of 1890. A singular coincidence is that while the total number of deaths for each of the past two weeks was 718, the total deaths for the first week in 1890 were 718. That figure is the high water mark during the present epidemic, but in 1890 the total number of deaths in one week, in the latter part of January, reached 777. Up to the last week of June there had been 666 less deaths than during the same period of 1890. But in the last six months of the year the death rate began to increase rapidly, and we end the year with 1,635 more deaths than occurred in 1890. In other words, the increase during the last six months of 1891 over the last six months of 1890 was 2,301. This increase is almost wholly due to the grip and the diphtheria.

The effects of the epidemic of 1889-90 did not disappear until the end of March, 1890. In 1891 it had a moderate run from January to June, but during those six months there were only 102 deaths caused by it directly. As it began earlier this year than it did in either 1889-90, or the winter of 1890-91, it is believed that it will disappear earlier.

Here is a comparative table of the deaths during the epidemic of 1890, and those during the past five weeks:

	January 5 to Feb. 8, 1890.	Dec. 5, 1891, to Jan. 2, 1892.
Influenza	107	198
Pneumonia	438	578
Consumption	386	284
Old Age	136	106
Paralysis	59	56
Heart Disease.	104	167
Bronchitis	60	115
Totals	1290	1504

In the same number of weeks the present epidemic has taken off 214 more victims than did its predecessor in 1890.

The present epidemic has worked much in the same manner as did that of 1889-90, and the majority of its victims have been over 50 years of age.

The Superintendent of the State Asylum for the Insane for the Southern District, at Harrisburg, in his annual report, just issued, ascribes influenza as the cause of insanity in six cases received during the year. The newspapers contain accounts of several suicides during temporary insanity induced by the same cause.

Prof. Da Costa also had something to say at his clinic at the Pennsylvania Hospital, Dec. 19, with regard to the prevailing epidemic. He presented cases illustrating different types, and compared this outbreak with that of two years ago. At the outset, he was quite positive in denouncing the use of the term "grip," or "la grippe," which is merely a popular French expression. He hoped that physicians would not only refuse to employ it themselves in speaking of or reporting cases, but also discourage its use in common language. The proper title for the present epidemic is influenza, and by confining ourselves to the use of this name we are brought into relation with previous outbreaks of the disease, thus facilitating comparison and clinical study. Physicians should discountenance eccentricities of nomenclature, which only cause confusion and lead to misunderstanding. The same types are seen this time as before—the nervous, the gastro-intestinal, and the catarrhal, with many intermediate forms. The fever is more of the continued type, lasting, with evening exacerbations and morning remissions, the fever ranging from 100° to 103°, or even 104°, for several days, though high temperatures have been rare. The absence of eruption and usual signs of bowel disorder, distinguish these influenza cases from those of typhoid, which in many respects they otherwise resemble. In many instances slight albuminuria, with hyaline and epithelial casts, has been detected. In the present epidemic there is the same severe headache, with muscular pains and tenderness, with less backache than in the last; but there is more restlessness, and, in addition, we have marked sweating at night. There is less affection of the nose and eyes, and more catarrh of the larynx and bronchia. The prostration of the muscular system and the cardiac weakness noticed in the last epidemic are also manifested in this, though in a less degree, and the whole course of the malady, as the rule, is milder. The fever runs its course usually in four or five days, but it may be a week or more, and it leaves the patient in a state of depression from which he may be months in recovering. The chief reliance in treatment, according to Da Costa, is quinine, stimulants in moderate quantities to sustain the circulation, chloride of ammonium for the catarrh, and nourishing food frequently, given in the form of broths, etc. Depressing agents should be avoided if possible, and when any of the newer antipyretics are given its effects should be carefully watched. Antipyrin and similar agents can only be safely administered in these cases by a physician and under his constant observation. The cardiac weakness and slow action of the heart may persist, and for this there is no remedy equal to strychnine. For the relief of the muscular pains, Prof. Da Costa uses small doses of phenacetine (grs. 3) with quinine (grs. 2) in capsules, every two to four hours; and also employs counter-irritants. It is an interesting question whether these joint cases are due to the poison affecting the spinal centers. The endocardial murmurs which are common are not the result of endocarditis, but are functional and connected with the fever process. The evidences of renal disorder soon disappear, but convalescence is prolonged. He concluded with the advice: Give up early; do not go out too soon.[1]

The Annual Oration before the Academy of Surgery, was delivered January 4th. by Dr. Thos. G. Morton, who took for his theme, "The Progress of Surgery in 1891." As the address was cyclopædic in character, covering most of the principal surgical work of the year, it is impossible to summarize it satisfactorily. He began with a tribute to Lister, who by his teachings made it possible to progress further in surgery than was deemed possible by surgical authorities previous to the introduction of modern wound treatment, and indeed many of our recent triumphs could not be achieved without antiseptic methods. In gunshot wounds of the brain, he advocated drainage, and reported a case in which a rubber drainage tube had been passed directly through the right hemisphere along the track of a ball which had been extracted by means of a counter-opening with a trephine. The patient died, but the results of irrigation and drainage were sufficiently good to warrant pursuing the same method of treatment in future with prospects of success, if performed early.

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[1] Clinical lecture in *Medical News*, Jan. 2, 1892.

In regard to linear craniotomy for microcephalus, a case of marked improvement was referred to, occurring in a child 3½ years of age, in the hands of Dr. Wm. H. Morrison, of this city. The treatment of spasmodic facial neuralgia, as advocated by Dr. Edmund Andrews, of Chicago, was referred to with approval. Most cases of facial neuralgia are benefited by operation. In one case he had known twenty years to elapse without recurrence of the pain. In operating upon recurring neuralgias, the tissues in the neighborhood of the original wound are opened up, and surrounding structures are torn out, just as is the bulbous stump of the nerve, if found. This is practically the process advocated by Dr. Andrews. Metatarsal neuralgia or painful affection of the foot, first described by Morton, was next mentioned. Cases of this kind are often mistaken for gout or rheumatic, perhaps hysterical, disorders; but in typical cases, no treatment will relieve except that advocated by Morton, of amputation of the joint of the fourth toe. In gunshot wounds of the abdomen, early laparotomy and careful exploration was earnestly defended, as it does not materially increase the risk to the patient, and affords the only means of saving life in many cases which would otherwise perish with peritonitis. Laparotomy for intestinal perforation in the course of typhoid fever was advocated, with the condition that it be performed as promptly as possible. A case was referred to, done by Morton in 1887, which he believed to be the first operation in this country for the repair of a perforated, typhoid ulcer. Unfortunately it was delayed for many hours after the accident had occurred, but the operation was well borne and in nowise hastened the fatal termination. In appendicitis he practices early laparotomy and extirpation of the appendix vermiformis, and advocates operation between the attacks in cases where recurrences have several times been experienced, especially if a tumor and tenderness persist in the appendix region. Macewen's operation for aneurism was discussed, and a case reported and patient presented, when it had been performed by Dr. Morton without success. He deemed it worthy of further treatment, however. Congenital club-foot he divides into *simple* (deformity limited to soft parts) and *complicated* (accompanied by partial or complete displacement of the astragalus), the latter requiring the partial or complete excision of the dislocated and deformed bone. Later on in life, there occurs a combination of these two, with more or less deformity. The form of operative treatment to be adopted in the inveterate deformities is that in which the foot can be placed and retained without any effort in an easy, right angled position with the leg. This can be better secured and with less serious injury, with the knife than by the aid of powerful levers and screws, which are still used by some surgeons for breaking the tarsal bones into position. Mechanical apparatus should not be depended upon to overcome deformity subsequent to operation, but simply to retain the foot in a normal position after the distortion has been corrected. Even after operation, such cases require careful looking after for months or even years.

In mammary cancer he advocated early extirpation and repeated operation. Return after removal has been the rule in the experience of Dr. D. Hayes Agnew, who writes, "neither the knife nor caustics cure mammary cancer." Eleven years had been the longest time that any patient, in Dr. Morton's experience, had survived the operation; but it should be performed in order to relieve pain and make the patient more comfortable and thus prolong life.

There was present at the same meeting a medical missionary, Dr. R. H. Nassau, who had lived thirty years near the west coast of Africa. He was invited to contribute some of his observations, and made some interesting remarks. He said that strangers visiting the equatorial region, were liable to suffer either with severe forms of remittant fever (malignant bilious remittant like the Panama fever) or to have boils and abscesses tending to recur annually, at the beginning of the rainy season. Deformities are common, such as club foot; extra fingers and toes are not rare; elephantiasis of legs and scrotum is also common. Tumors, bursal, fibroid, and abdominal, (the latter occuring in women and probably ovarian) are very frequent. Mammary abscess in nursing women he had often seen, but could not recall a single case of carcinoma of the mammary gland. Gynecological disorders are very prevalent, from the laborious occupations of the women; from carrying burdens upon their heads, and especially from maltreatment during and after confinement.

Syphilis and venereal diseases were not uncommon, if not introduced by white men; they were rendered far more prevalent than they were before, from all that he could learn from the natives. Insanity receives no treatment, except if the patient is troublesome he is abandoned in the woods or thrown into a river. The sleeping sickness, which terminates fatally after several months stupor and somnolence, he attributes to the use as food of Cassava obtained from a variety of the Jatropha Manihot, or Sago palm, growing in that region of the world, which he says is a poisonous variety. The disease therefore may be classed among dietetic affections, if he is correct in his explanation, and not unlike poisoning by mush-rooms, which are also used as food and sometimes are poisonous. This is a subject worthy of further investigation both from a physiological and a therapeutical standpoint.

At a recent meeting of the Philadelphia County Medical Society, Dr. Willard presented a series of histories of injuries of the cervical vertebræ. One case was a boy about 13 years of age, who had fallen 30 feet upon his head. The third cervical had been fractured, but the displacement was so moderate in degree that the cord was but slightly pressed upon, and neither sensation nor motion were seriously impaired. A plaster of Paris encasement was applied so as to fix the head, neck, shoulders and thorax. Extension and counter-extension in a horizontal position was maintained by weight and pulley for six weeks. The boy, a year afterward, had limited motion in the direction of rotation to the right, but in other directions he could bend the neck with ease and comfort.

Another case was a boy who, in diving, struck his head violently against the bottom of a pool. After his recovery from the shock the symptoms were negative. A few hours later, there was impairment of motion and sensation in one arm, and in other parts of the body. This was evidently due to hæmorrhage within the spinal canal and consequent pressure upon the cord. He recovered perfectly in a few weeks under extension and rest.

Another case was that of a boy who fell through an elevator shaft, striking upon his head. Upon recovering from shock he was able to walk home, although there was considerable pain in the neck. The head could be rotated toward the right, but not toward the left. There was a prominence in the pharynx opposite the second, and the atlas was apparently displaced backward. Fracture of the odontoid was diagnosed. On the following morning, the patient was so well that he endeavored to go to his work. A few hours later, however, he became unconscious, and died ninety hours after injury. The odontoid was found to have been broken off directly across its base. There was also a large fragment broken off the longer vertebra. The odontoid ligament had not been torn, which prevented further displacement and pressure.

Another case was that of a man who fell, completely crushing the posterior part of the bodies of the vertebra, including the lamina, from which death resulted in a few hours.

These cases show that the prognosis of the cases of broken neck depends very largely upon the amount of injury primarily inflicted upon the substance of the cord itself.

The Board of Health of the City of Philadelphia, on motian of Dr. Ford, adopted a resolution, January 6, petitioning the Senate and House of Representatives of the United States for the establishment of one or more stations for the registration and humane treatment of persons suffering with leprosy in this and other States.

The Philadelphia Cremation Society reports fifty-one incinerations for last year, an increase of 25 per cent. over the year previous. A resolution was adopted at the annual meeting, recommending the passage of a law requiring the cremation of the bodies of persons dying with infectious and contagious diseases.

Messrs. J. B. Lippincott announce a new medical monthly, *The International Medical Magazine*, with Dr. Judson Daland as managing editor. A good corps of collaborators is promised. The first issue was to have appeared early this month. One of its features is a department upon forensic medicine, under the direction of a member of the Philadelphia Bar, L. D. Beuleth, Esq. "Of the making of new books there is no end."

We have recently lost Dr. Samuel R. Knight, Superintendent of the Episcopal Hospital of this city for many years, and a member of the County Medical Society, American Medical Association, and other societies, where he had many friends. Dr. A. H. Gerhard, Professor of Physiology in the Medico-Chirurgical College, who had been in delicate health for several years, also died last month, with œdema of the larynx, the result of influenza. He was of a genial, though retiring, disposition, and had many warm friends.

NECROLOGY.

E. J. B. Statler, M.D.

At his residence, Marshalltown, Iowa, Jan. 1, occurred the death of Dr. E. J. B. Statler, from lung fever and other complications, aged 65 years.

He was born at St. Thomas, Franklin Co., Pa., was educated at Jefferson Medical College, Philadelphia, graduating in 1851; was married to Miss Sarah J. Kemp in 1847, who now survives him, by whom there are six children: Benj. E., Wm. E., Mrs. F. W. Wells, Mrs. Geo. W. Beasley, Mrs. W. T. Utz and Miss Nellie Statler. Dr. Statler came to Iowa, locating at Iowa City in 1856, and at Marshalltown two years later. He went into the army as assistant surgeon of the Twenty-eighth Iowa volunteers, and was afterward made surgeon of the Thirty-eighth Iowa infantry, being in the service two years and a half. On his return he was elected Mayor and served one term. He was a kind-hearted, generous man.

The funeral occurred Sunday afternoon from his late residence, Rev. Dr. Rhea officiating, assisted by Rev. William Bryant, and was largely attended.

Medical Director Henry O. Mayo, U. S. N., retired, died at his home on Fifth Ave., New York City, on Thursday, December 31, aged 71 years. He was a native of New York, and was appointed from that State in 1846. He became medical inspector in 1871, and director one year later. His retirement took place a little over six years ago, since which time he has made New York City his abode. His family is one which has been well represented in the medical fraternity.

Dr. Samuel Waldo Hart, of New Britain, Conn., died December 31. He was a native of that town, born there May 22, 1825. He was a graduate of the old Berkshire school, and an honorary M. D. of Yale College in 1855. He was elected mayor of his city for five terms beginning in 1872. He was an honorary member of the State Medical and Hartford County Societies.

Dr. Frederick Bedford, of New York City, died December 28, aged 54 years old. He was the son of the late Prof. Gunning S. Bedford, one of the coadjutors of Dr. Valentine Mott, in the founding of the Medical Department of New York University, from which school Dr. Frederick Bedford graduated in 1859. He was one of the founders of the New York County Medical Association and a member of numerous other organizations. His special predilection in practice was for obstetrics, in which branch he had been clinical assistant in the New York University for many years.

Sir James Risdon Bennett, M.D., LL.D., F. R. S., president for four terms of the Royal College of Physicians, London, died December 15, aged 82 years. He was identified for many years with St. Thomas Hospital, holding the chair of theory and practice, and becoming later honorary physician and governor. He was a representative of his College in the Royal Medical Council and vice-president of the Royal Society. He was chairman of the executive committee of the International Medical Congress.

The Development of the Sections of the American Medical Association has occupied some of the attention of Dr. Leartus Conner who, at the last meeting of the Association formulated his views as follows: 1. The sections are the Association, and should conduct its affairs. 2. The simplest method of attaining this end is to have each Section appoint an executive committee of three to look after the interests of each individual section, and to unite with a similar committee from the other sections to form a section council. 3. This council should have charge of all affairs of the Association that bear upon the development of the sections. 4. The members of the several section executive committees should be appointed for three years, and be composed of ex-chairmen of the section, the retiring chairman of each year filling the vacant place of the retiring member. The details of the plan can readily be made to fit into the existing state of affairs, when once our first proposition is admitted.

The section in ophthalmology ratified this by electing three members and now the originator of this method is desirous of having every other section do the same at the next meeting. There is no doubt that such a section council could wield a large influence for the bettering of the sections.—*St. Louis Med. and Surg. Journal.*

Alkalies in Universal Pruritus.—Lange (*Hospitals-Tidende*, No. 21, 1891) has found that sodium bicarbonate and lithium carbonate, combined with carbolic acid compresses, have a very prompt effect in relieving universal pruritus. He refers to an extreme case in which the condition was improved in a few days, with marked relief in six weeks, and in three months hypnotics were unnecessary.—*British Med. Journal.*

Treatment of Convulsions in Children.—T. G. Davis recommends, if the patient is cyanotic, a few whiffs of amyl-nitrite.

A Hypnotizer in Jail.—A man, calling himself Dr. Vint, has been sentenced to three months at hard labor, in England, for giving exhibitions of alleged hypnotism.

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This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1271, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, JANUARY 16, 1892.

METHODS OF MEDICAL INSTRUCTION.

This always interesting, always threadbare, but never worn out subject, was a theme of discussion in a recent meeting of the Practitioners' Club of this city. There was a general harmony of views expressed by the speakers, all of whom are active teachers and represented the several medical colleges of Chicago. While, as the honored guest of the occasion, PROFESSOR VAUGHAN, of the medical department of the University of Michigan, presented his views.

PROFESSOR E. L. HOLMES urged the necessity of more and better laboratory instruction, claiming that the laboratory work should be extended, and in conjunction with the clinic, be made the manual training school of the medical student.

PROF. QUINE urged the importance and value of the didactic lecture as an important factor in the teaching of medicine, and deprecated the giving of clinics before large classes. PROF. VAUGHAN said text books could never take the place of the living exponent. That the art of the professor is not only to instruct his class in the fundamental truths of his subject, but to infuse them with a spirit of investigation and to make his pupils feel that they must learn to think and act for themselves. Laboratory work and laboratory teaching is only in its infancy. Much is to be hoped for in this direction. PROF. VAUGHAN paid a generous and glowing tribute to DR. JOHN H. RAUCH, the late secretary of the Illinois State Board of Health, for the great work he had accomplished in elevating the standard of medical education in all the medical colleges.

PROF. CHRISTOPHER spoke of the special value of clinical instruction when given to individuals and small classes.

Others spoke with deprecation of clinics given before large classes.

The entire discussion of the evening was very satisfactory in giving those who were present an opportunity to hear an expression of thought on this subject by prominent and successful educators.

It is quite evident that there is a feeling of unrest and anxiety for better methods of teaching medicine *on the part of the most experienced teachers.*

A subject not touched upon, for lack of time, was the trend of the period in the affiliation that is taking place between the Medical Colleges and the Universities. In most instances as yet this affiliation is only nominal, but it is the first or initiatory step toward a more practical connection. A University in name is not a University in fact without it has a medical department with its medical teaching faculty. The one is a normal part of the other. When an absolute unification of medical schools in and with the universities does come about, there will follow a strength and power for advancement which does not and cannot otherwise exist. With such a *unification of interests* there will naturally succeed an endowment of laboratories, professorships, fellowships, and scholarships which will not and can never come under other conditions.

Within the last very few years—we might almost with propriety say, within the last very few months—there has been a rustling and a rattling, as of dry bones, indicative of a change of thought, an evolution of sentiment amounting to a tacit demand, that is a sure premonition of a forward movement all along the line. The several State legislatures are, one after another, with reasonable rapidity, enacting laws having for their purpose an elevation of the standard of educational requirements for the privilege and right to practice medicine. This is not in a broad sense a system of class legislation, for such Acts are for the common conservation of the health and lives of all the people.

A NEW METHOD OF INDUCING LOCAL ANÆSTHESIA.

DR. LEONARD CORNING has described in the *New York Medical Journal*, December 26, 1891, a novel procedure by which he obtains a protracted loss of sensation, without freezing the tissues. He uses a double hypodermic syringe with a single needle. One barrel of this syringe contains a solution of muriate of cocaine, while the other has a pure, non-irritant oil, preferably the oil of theobroma, or "cacao butter," as it is commonly named. The strength of the cocaine solution should be two or three parts of the salt to one hundred parts of water. The oil of theobroma in the larger barrel of the syringe is maintained in a fluid state by occasionally dipping the syringe into water of about 110° F. The cocaine is first thrown into the tissues that are to be made insensitive, then, without removing the needle, the cacao oil is made to follow along the same path. By the next step, which is the original feature of the procedure, cold is applied over the surface, and the oil is precipitated or solidified, obstructing the capillary circulation, and thus producing a local stasis that "anchors" the cocaine solution. By this method, Dr. Corning has maintained a "limited zone of anæsthesia" for more than an hour, and he sees no reason why he may not double that period of insensitiveness, if desirable. The chilling of the surface, in order to harden the subcutaneous injection of oil, may be effected either by cold water, ice, or by the ether spray; the latter being the preferable way. The spray does not need to be continuous, since an occasional refrigeration is adequate to keep the oil solid, provided that the temperature of the anæsthetized part is kept below 86° to 95° F., which is the melting point of cacao butter. When the local anæsthesia is no longer required, the oil is melted by the heat of the body, and is taken up into the general circulation, when the application of external refrigeration is discontinued; even during the application of cold, there is a gradual melting of the solidified oil, beginning at the periphery. In consequence of this fact the anæsthesia begins to fade away at the periphery. But this subsidence of the anæsthesia may be markedly retarded by simply taking up the "slack of the skin" outside the oil-injected surface. This is done by pinching up a fold of skin and *holding it thus doubled by means of* small spring clothes-pins or by narrow strips of elastic adhesive plaster. But this step does not imply that a stretching of the skin is essential to the attainment of the most complete results. It is simply a removing of the excessive elasticity of the skin over the injected area. Dr. Corning has hope that the method of protracted localization of remedies may be found useful in a variety of ways beyond that which has first suggested itself, in the employment of cocaine and cacao butter for the induction of a protracted anæsthesia serviceable to the surgeon.

PHYSICIANS AS POLITICIANS.

At a recent gathering of members of the medical profession in this city, a distinguished gentleman arose to direct attention to the fact that in the great Cook County hospital the teaching of students was absolutely prohibited, and at once entered upon a tirade against politicians and their *methods, saying* he hated them as he did sin and the Evil one.

We could not but think the gentleman was one of a great number who imagine themselves particularly good because they keep aloof from politicians. In this he plays a very unwise part. If he and his kind mingled a little more closely with politicians, and showed the ward statesmen that he was individually interested in the management of city and State affairs, there would be a good deal more respect for each other manifested on all occasions; for the truly good doctor need not think that any more than half of the disrespect there is going, is on his side of the house.

Let the good doctor at the very next municipal election, or a little before the election, gather together at his house a dozen of his personal friends and neighbors, and there and then formulate a ticket of men that he and his friends believe to be good, true and capable of representing what he regards as the best interests of the city and State. This being done, let him and his friends agree to go to the polls, and stay there *during all the hours the polls* are open, and solicit the vote of every man who comes there to exercise the rights of citizenship. Then let the good doctor go to the convention, if only to see how the meeting is managed. The candidates for office having been selected, the doctor should not cease his labors but should go to the church and prayer meeting, if need be, to meet his friends, and to urge their going to the polls. There is a deal of religious duty in such an effort to secure a righteous government. This being done and well done, the doctor may not, at the very *first attempt, see his nominees elected to office, but* he will have accomplished a great deal in the way of obtaining the respect of the now hated politicians, and this respect will be reciprocal. Some practical attention in this way to ward statesmanship, will very soon fling wide open the doors of Cook County *hospital, the insane asylum and every other* public institution which the good doctor wishes to enter with his students.

Not only so, but the good doctor would have a most respectful hearing of and a heeding to his statements, when showing the county authorities whom he helped to nominate and elect to office, where the branch hospital for contagious diseases should be located.

We have not one particle of sympathy for the goody good doctors who inveigh against politicians and their methods, and go up to the temple and there, with solemn and elongated countenances, thank the Lord they are not as other men, not even as the *poor politician, who comes in hanging on to a good* wife's apron strings.

Every time, the doctors can have their own way in everything that pertains to the conservation of the health of the people, and secondarily of their own public interests.

RIGHT ILIAC DISEASE.

More particularly of late years have diseased conditions in the right iliac region attracted attention, and the terms typhilitis, perityphilitis, and appendicitis, have been much discussed. The surgeons have about decided that appendicitis is the correct term, and that appendicitis is the initial lesion of all so-called inflammatory disorders of the right iliac region, which *have any connection* with the bowels.

The paper of Dr. Joseph Price, on appendicitis, read before the Philadelphia County Medical Society, Sept. 28, 1891, may be taken as a fair index of the state of the surgical mind regarding this subject.

Dr. Price says: "The old terms were arrived at by examining old, neglected cases, often post-mortem. Recently but one term—appendicitis—is used before laparotomy, before post-mortem, because those two performances prove that so far as the gravity, intensity, and extent of the disease are concerned, the symptoms are unreliable, inadequate; further abdominal sections and post-mortems have determined what the treatment should be—that is, surgical, under a surgeon from its inception; hence the name indicating and impressing the nature of the disease, and the character of the treatment—that is, appendicitis surgicalis. Idiopathic peritonitis indicates nothing—is an empty term. The terms typhlitis, perityphlitis, paratyphlitis, extra-peritoneal abscess of the right iliac fossa, are useless except to indicate a secondary or late process originating, without exception, in inflammation of the vermiform appendix."

This language is certainly misleading. That the great majority of cases of right iliac disease are of a mild type, and amenable to medical treatment, is well known to the medical man, if not to the laparotomist.

A little later in Dr. Price's paper occurs this statement: "Thirty-five per cent. of all post-mortems show residua of appendicitis; 36 per cent.—over one-third—of 300 autopsies done at random, revealed diseased appendix (Toft). One case of perityphlitis to 100 of appendicitis (McBurney). Assume that one-third or more of all adults have one or more attacks (Keen)." With these statements the physician can agree. But how common laparotomy would become, if all these cases required that operation. As a matter of fact, these figures show very conclusively, not only that appendicitis very rarely requires surgical intervention, but that, in many instances, it must be so mild as not even to be suspected.

The sweeping assertions of the surgeons relative to the necessity for operation in most cases of appendicitis, are no doubt made in good faith, and as the teachings of a rich experience, but these assertions certainly do not harmonize with the daily observations of physicians, and the explanation of these differences of opinion can only be found in the supposition that the great majority of the cases which are brought to the attention of the surgeon, or rather the laparotomist, are cases which do require or have required operation; while the physician is concerned with another type of cases.

The results accomplished by surgery, in cases which would have proved fatal under purely medical management, are exceedingly encouraging; but the indications for surgical interference should be clearly understood by the physician, before he requests the services of the surgeon.

A clinical lecture by Jules Simon,[1] at the Hôpital des Enfants, Paris, sheds much light upon another phase of the question. Prof. Simon's observations have been made mostly upon children, but are applicable to adults, particularly as, in many instances, the trouble in the adult is a heritage from his childhood.

One case which Simon reports indicates very well his general views upon the subject. A little girl, 6 years of age, who had been the subject of an obstinate constipation since her earliest infancy, presented evidences of cæcal obstruction, followed by diarrhœa, and inflammation of the region. She was put upon treatment, and at the end of three weeks was entirely well, not even the least difference in suppleness of the two iliac regions being apparent. The mother was cautioned to look out for relapses, and particularly to watch for signs of constipation, and to prevent it. In spite of his injunctions, the hygienic measures which had been prescribed were disregarded, and a year later, the child was taken with typhlitis, then appendicitis, and finally with perforation, rapidly terminating fatally. Simon believes that in this case, prolonged constipation produced a dilatation of the cæcum, hardened fæces irritated the intestinal walls, the appendicular orifice became dilated, foreign bodies entered the appendix, with resulting ulceration and perforation. Whether this explanation is correct in every detail, may well be questioned. As pointed out last week, a further investigation of the relations of the bacterium coli commune to appendicitis, must be awaited. But this much is certain, obstinate constipation, and some form of right iliac disease, preceded the fatal appendicitis.

In this connection Simon says: "In all the cases that I have investigated, either in private or hospital practice, I have observed the same pathological evolution, and in cases where a special hygiene was observed, and suitable treatment (laxative) instituted, and faithfully carried out, the patients always escaped further accidents." With these statements many medical men will be found to agree.

Simon recognizes three stages of the disorder, preliminary to appendicitis. 1st. Simple constipation; 2nd. Engorgement and thickening of the cæcum; 3rd. Stecoræmia, or constitutional manifestations from the retained fæces.

It is not uncommon to find cases of rather sudden pain in the right iliac region, with more or less tenderness when pressure is made over the appendix. There may also be present a nervous condition simulating shock, a rapid pulse, and some mental anxiety. There may or may not be elevation of temperature. Tenseness of the abdominal muscles with possibly induration of underlying tissues is usually present. In view of the revelations of the post-mortem table these cases ought to be classed as appendicitis. While the history may not always indicate preceding constipation, flushing the bowels will almost always bring to light old, hardened masses of fæces. An immediate exciting cause, such as shock, trauma, exposure to cold, indiscretion in eating, may often be found. Often it is a mere coincidence, but in some instances may be the reason for the occurrence of the appendicitis at that time. Appendicitis, however, would not have occurred from the particular exciting cause, if the preceding predisposing conditions had not been present. Now if these cases are appendicitis, then appendicitis is only occasionally a surgical disease, for the vast majority of these cases recover promptly under such widely different lines of medical treatment as laxatives, with poultices locally, or the free use of opium. While favoring the laxative plan of treatment we cannot here discuss the relative merits of it and the opium treatment.

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[1] Le Bulletin Medical, September 9, 1891, p. 849.

In closing, we wish to repeat, and approve SIMON'S words: "I admit, for my part, all that appendicitis has revealed at autopsies; it is the cause of the adhesions, the abscesses, the escape of foreign bodies into the peritoneum, under the peritoneum, and even into neighboring cavities; but I cannot repeat too often, that in my opinion, appendicitis is a result, and the so-called premonitory period is the cause."

Right iliac disease is very common; it usually yields to medical treatment; its great danger is progressive appendicitis.

TUBERCULOCIDIN.—The first installment of the purified tuberculin, prepared by Klebs, of Zurich, has been received by Dr. Rachel, of New York City. It will be used at once in the treatment of some cases of tuberculosis in a private hospital conducted by Dr. Rachel. This "tuberculocidin" is stated to be an attenuated form of Koch's lymph, and is relatively free from the "reaction fever." The name tuberculocidin was given by Klebs to this preparation of his, to signify that it has the power to destroy the bacillus of tuberculosis to an even greater extent than the tuberculin of Koch, and to have an even wider range of therapeutic activity.

THE *Medical Fortnightly*, of St. Louis, Dr. Bransford Lewis, Editor and Publisher, and *The Doctor's Weekly*, of New York, Dr. Ferd. King, Editor and Publisher, make their *début* with the advent of the new year. The appearance of both publications is highly creditable, but not more so than we should expect, with such well-known and experienced journalists as Drs. Lewis and King as managers.

MEDICAL DEPARTMENT OF THE UNIVERSITY OF MICHIGAN.—The first ward of the new hospital of the medical department of Michigan University, is now completed and will be formally opened by the Governor of the State, Jan. 20th. On this occasion an address, "The Hospital: an element and exponent of Medical Education," will be given by Albert L. Gihon, A.M., M.D., Medical Director, United States Navy. The hospital was designed by Chamberlain and Austin of Boston, and E. W. Arnold of Detroit, and is supplied with modern hospital appliances. The ward just completed contains clinical amphitheatre, consultation rooms, offices and accommodations for eighty patients. It has cost about eighty thousand dollars. The plan provides for three additional wards, the erection of one of which will be begun during the present year.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopædic Surgery.

Stated Meeting Dec. 18, 1891.

SAMUEL KETCH, M.D., CHAIRMAN.

CONGENITAL ABSENCE OF A PORTION OF BOTH LOWER EXTREMITIES.

Dr. John Ridlon presented a boy, ten years old, who had been brought by Dr. Manning to the last meeting of the Hospital Graduates' Club. There was an entire absence of all the parts below the condyles of the fumur, and just posterior to the extremity of each of these stumps, was a fleshy mass, which probably represented the undeveloped digits. The boy could walk quite well on these stumps, and at present was wearing artificial limbs, but as these caused pain, he had presented the boy with the hope that some suggestions might be offered as to the best way of treating the case. It was questionable whether an artificial leg with a joint at the knee could be applied to the limbs of this length, and hence, the question of amputation might properly be considered. Personally, he was in favor of applying artificial legs without any knee joint, directly to the stumps without operative procedures.

Dr. W. R. Townsend thought that the fleshy masses would interfere with the proper application of these artificial limbs, and hence, favored removing them.

Dr. J. E. Kelly thought the fleshy masses were undoubtedly the remains of the undeveloped lower portions of the limb. He thought their position the normal one in utero. He had seen within the last few months a somewhat similar amputation in the upper extremity, with rudimentary digits which were capable of movement.

Dr. Halsted Myers, on examination, found a slightly movable bony mass between the condyles of the left femur, probably a poorly developed patella. He thought the case one of non-development, not amputation.

Dr. Myers presented a case of congenital deformities of the upper and lower extremities, and asked the opinion of the Section as to the value of operative procedures for the relief of the constrictions caused by amniotic bands.

Dr. Kelly thought the phalanges of the great toes were perfect in this case, but that the digits had been suppressed, and development had taken place beneath the skin.

The Chairman referred to a child he had seen in which there had evidently been an attempt at amputation in utero. There was a deep constriction just above each ankle, more marked, however, on one side. The mother of this child, quite early in pregnancy, was tripped by a cord which some boys had tied across the street, and it was thought that this maternal impression was responsible for the deformity. The child has been able to walk with the aid of ordinary ankle supports.

Dr. Townsend did not favor operating upon these constricting bands, for the resulting cicatrix would cause further contraction.

Postponed discussion on Dr. J. E. Kelly's paper on "The Anatomy of the Foot, with Exhibition of a New Club Foot Shoe."

Dr. Royal Whitman said that the author had spoken of removing a wedge-shaped piece from the cuneiform bones, but as these bones were quite small, their dimensions varying from one-half to one inch, it was evident that a cuneiform osteotomy on such bones would be impracticable. The calcaneus could, of course, be treated in this manner by cutting to a considerable depth, but such an operation was totally unnecessary. When one recalls the fact that the astragalus is poised on the os calcis in unstable equilibrium, there seems to be no reason for increasing this instability. Such operations might be allowable if it were true, as had been stated before in the Section, that the radical cure of flat-foot was impossible, and that all that could be hoped for was relief. He had seen more than three hundred cases of flat-foot, and he believed that a radical cure without operation was not only possible, but easy.

Dr. A. B. Judson said that the mechanical toy constructed by Dr. Kelly, admirably illustrates the fact that human locomotion resembles the action of a wheel in motion, in which the legs are the spokes, and the feet are the felloes, as pointed out by Dr. Holmes. That ordinary locomotion is a continual falling, and a continual recovery is seen in the gait of a child learning to walk, and in the titubation of a drunken man whose body inclines in a given direction, and would fall if the legs and feet failed to make a timely movement forward to prevent a fall.

Dr. Judson said that Dr. Kelly's apparatus takes advantage of the weight of the body for the correction of the varus. It is well known that varus, corrected to a certain point, and held there, is further corrected by the weight of the body applied in successive blows, as the child runs about. On the other hand, if the varus is reduced only to a point on the wrong side of the line between deformity and symmetry, each footfall is a blow increasing the varus. Dr. Cook, of Hartford, had shown a varus shoe at Washington last summer, which had attached to the sole, a flat piece of steel extending outward a few inches to enable the weight of the body to act in a favorable manner on the deformity. He had seen a horse treated for some affection which made it desirable to prevent extension of the foot, by the application of a horse shoe having a long posterior prolongation. The veterinary surgeon can attach his apparatus with absolute firmness to the foot, but, in our patients, the foot is liable to turn over inside of the shoe. As a rule, the weight of the body can be made more effective by the use of an apparatus having an upright extending up the leg, and a steel foot piece in which the foot is prevented from rolling by a strip of adhesive plaster.

Dr. R. H. Sayre said that this succession of falls during the act of locomotion, was well shown in instantaneous photographs of athletes running. The shoe exhibited by the author was doubtless intended for the treatment of club-foot in the later stages, when it was possible for the foot to be placed flat on the ground in a fairly good position. Before this stage, the shoe could not be easily adapted to the crooked foot. The usefulness of this "snow-shoe" was not so much on account of its shape, as of the fact that there was a long lever on the outer portion of the foot, which prevented the child from standing on this outer portion.

In connection with this shoe, he had intended to exhibit a shoe which one of his patients devised for his own use. His shoe was made with the sole sloping outwards for some distance, thus answering the same purpose as the snow-shoe. This patient had adhesions and contracted tendons following infantile paralysis, so that the weight of the body was unable to do more than prevent an increase of the deformity. The foot was only brought straight by subcutaneous tenotomy and the use of very strong force, applied by means of Bradford's instrument.

The Chairman said that many instances were recorded in which this principle of utilizing the weight of the body had been embodied in various kinds of apparatus. In some cases of equinus, the patients have been allowed to walk without apparatus, with the idea of utilizing this factor.

Dr. Royal Whitman read a paper entitled

A CONSIDERATION OF SOME OF THE AFFECTIONS OF TENDON SHEATHS AND BURSÆ, AND THEIR RELATIONS TO INJURIES AND DISEASES OF THE JOINTS.

He briefly described the structure and anatomical relations of bursæ and tendon sheaths, their diseases, and appropriate treatment, calling attention to the fact that chronic disease of tendon sheaths was usually tuberculous in character, for which early removal was the only remedy.

The relation of the tendon sheaths to the ankle and wrist joints, and their liability to injury in sprains and fractures, explained the symptoms—weakness, local pain, and limitation of normal motion, often persisting after such injury.

The importance of local massage and stimulation in the early stage, in order to prevent the formation of adhesions after secondary inflammation of tendon sheaths, was urged.

In chronic and neglected sprains, a careful examination should be made, and if adhesions or contractions were present, treatment should be directed to a recovery of the normal range of motion. This result might often be accomplished by a forcible over-stretching, under ether, followed by massage and support. By such treatment, patients disabled for many months might be quickly and permanently relieved.

In conclusion, attention was called to the importance of slight injuries in childhood, which might be the starting point of tuberculous disease, the diagnostic value of chronicity, and the necessity of careful observation and early treatment in suspicious cases.

Dr. Judson said that he had seen a tumor of the semimembranous similar to the one shown in the model. The child was about 6 years old, and under a purely expectant treatment, the tumor disappeared in the course of a few months, leaving no deformity or disability.

Dr. Townsend said that he had seen many of the cases referred to by the author, and he had been struck with the many and varied diagnoses which had been made upon them before they came to the dispensary. The diagnosis in the early stages is often difficult, especially when there is only a meagre and often misleading history, such as accompanies most dispensary cases. The importance of differential diagnosis could not be too strongly emphasized, particularly as upon it depended a correct prognosis.

Dr. C. A. Powers said that he inferred from the author's remarks on injuries at the lower end of the radius, that he recommended confining the flexor and extensor tendons of the fingers in the treatment of Colle's fracture. He saw a large number of these cases with functional disability following this method of treatment, and he therefore preferred to use the long anterior splint for the first five or six days, and then to shorten both the anterior and posterior splint to the first row of the carpus, directing the patient to make very active use of the fingers. Four or five days after this, he expected them to be able to shut the fingers well down into the palm.

Dr. Kelly said that in Dublin, the home and birthplace of Colle's fracture, the keel-shaped splint, which avoided injurious pressure on the thenar and hypothenar eminences, was almost universally employed. The mode of development of the bursæ found on various points exposed to pressure is difficult to understand, unless we remember that the peritoneum, which is the great areolar interspace of the body, has had a similar development from the connective tissue structures.

He was glad that the author agreed with him as to the position of the foot, viz.: slight adduction with the foot at right angles to the leg. This slight adduction produces what he called "artificial talipes varus."

The Chairman said that he inferred from what the author said, that he considered these bursal tumors of tubercular origin. He wished to dissent from this opinion, for many of them were benign, and the result of injury.

Dr. Whitman explained that he had spoken of slow, chronic enlargement of the sheaths of the tendons of the wrist and hand as tubercular. The deep-seated bursæ were favorably situated for tubercular inflammation, and accordingly, when they underwent chronic enlargement, he preferred to treat them radically. He had only incidentally referred to the treatment of Colle's fracture. He did not consider the confinement of the fingers, with vigorous massage and local stimulation, the same as the confinement treatment which had been criticised during the discussion.

Mr. E. E. Hicks exhibited a chair and desk which he had devised, and to which reference was made in the recent discussion on the subject of the relation of faulty attitudes to lateral curvature of the spine.

The desk and seat admit of an independent vertical adjustment, which is manipulated by means of a key. The slope of the desk can also be varied to suit individual requirements. The desks and seats can be folded so as to occupy very little space, thus facilitating cleaning the schoolroom, and allowing room for gymnastics. The seat and desk have a common base of support; a child using the desk, therefore, occupies the seat joined to the desk next behind. This improved desk costs only about fifty cents more than those now found in the market.

Dr. R. H. Sayre thought this desk was a decided improvement on the usual style.

The Chairman thought it might be desirable for a child already suffering from lateral curvature, but he did not believe that faulty attitudes at school were the cause of rotary lateral curvature.

TUBERCULAR DISEASE OF THE VERTEBRÆ IN ITS EARLY STAGES.

Dr. R. H. Sayre presented the second, third, and fourth lumbar vertebræ of a patient, showing a very early stage of tubercular disease. There was a cheesy mass in the third lumbar vertebræ which had not yet broken down and ulcerated through into the cartilage. The points of junction between the second and third and the third and fourth vertebræ were apparently normal. There was an extravasation of blood into the vertebræ. The history of the patient from whom these specimens were taken was quite interesting. A child suffering for some time from chills and high temperature began to have a peculiar posture and mode of locomotion, and to suffer from abdominal pains. This led to a diagnosis of spinal disease, but in a consultation with an orthopedic surgeon this opinion was not confirmed, the latter believing that the child was suffering from malaria. The symptoms not subsiding under the administration of quinine, the child was brought to Dr. L. A. Sayre, who concurred in the diagnosis of the disease of the spine. At this time there was some psoas contraction on the right side, with spinal rigidity and very slight pains. It could hardly be said that there was a kyphosis; the lumbar spine was straight instead of concave. The child was placed in a wire cuirass. About a month later he suddenly developed a temperature of 104°, with vomiting, photophobia, phonophobia, stiffness of the neck, and a rapid pulse. He was then seen by the speaker, who found an abdominal enlargement near the left side of the umbilicus, which could be separated by percussion from the spleen. It was quite freely movable. Small doses of bichloride of mercury were administered, and in a few days the temperature fell to 100°, and remained at this point, and the other meningeal symptoms disappeared. There was no colic, indicating tubercular peritonitis. The child became now even more anæmic than before, and the abdominal swelling increased in size. It seemed hardly possible that the mass could be a psoas abscess, pointing in such an unusual position. After some time the mass became larger and moved toward the posterior surface of the abdomen. In consultation with Dr. W. T. Bull, it was decided to be inadvisable to operate. The child died six days ago, and for a few days before death there was slight jaundice. The post-mortem examination showed that the abdominal tumor was formed by a tubercular mass which united the intestines into one large mass. There were no small miliary tubercles scattered over the peritoneum. One little band pressed upon the gall bladder, and so accounted for the jaundice. The kidneys were firmly bound down with adhesions, and the left one was very large and waxy, and its pelvis was much dilated. There was a large quantity of fluid in both pleural cavities, and cheesy nodules at the apices of the lungs. The heart was enormously thickened. The brain was not examined.

The Chairman thought the symptoms described were more like those of an acute non-tubercular meningitis, as in the initial stage of the tubercular variety a high temperature was unusual, and the pulse was ordinarily slow or intermittent. Then, again, the subsidence of the symptoms was not in accordance with such a diagnosis.

Dr. Kelly called attention to the fact that in the early and late stages of tubercular meningitis the pulse was rapid, while in the intermediate stage it was slow.

Dr. Ridlon said that he inferred from the remark of the Chairman that he shared in the general feeling in the profession that if a child survived, it was proof that the meningitis was not tubercular, and *vice versa*. He desired to dissert from this opinion. Eight or nine years ago he had treated a boy who had suffered from a form of meningitis which several eminent consultants considered to be tubercular; and they had an opportunity of seeing the patient a good many times. The patient was still alive, but he did not believe this proved that the diagnosis was incorrect.

The Chairman said that he had never seen one undoubted case of tubercular meningitis recover, although he believed there were a few such cases on record.

Dr. H. W. Berg was not aware that there was any symptom, either subjective or objective, which would enable one to make a diagnosis between simple and tubercular meningitis. He thought that there was a high temperature at the beginning of a meningitis; it was due to a series of eclamptic seizures which, by paralyzing the heat center of the body, allowed of a sudden rise of temperature.

Dr. Townsend had had an opportunity of seeing a considerable number of cases of tubercular meningitis, almost all of which had been proved by autopsy to be tubercular, and he could not recall any case where there was an extremely high temperature at the beginning.

Dr. R. H. Sayre said that he had looked upon the meningitis as tubercular, because of the very general tubercular infection. The child looked as if it would die within a few days after the onset of these meningeal symptoms, and he was much surprised when the acute symptoms subsided so rapidly. The high temperature might have been due to the abdominal lesions. The extent of the abdominal lesions was remarkable, as they were younger than the disease in the spine.

Dr. T. Halsted Myers, Secretary,
24 West 50th Street, New York

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(*Continued from page 60.*)

If there are cases where dangerous pressure symptoms are present and other treatments have been tried, then possibly abdominal puncture should be tried, but I think it is a dangerous question to suggest it to the society, particularly when you clothe it with the idea of its being practically without danger.

Dr. Nunn:—I have known of a number of cases of abdominal puncture by Dr. Cutter, and some of these were successful, and they were made very curiously. I do not exaggerate when I say that his needles were bayonettes. He was successful in a large number of cases.

I used puncture a great deal in cases of various kinds, and I have to say that as I bring my mind back to previous to 1876, when I was in Europe and when I was using a needle which was very satisfactory in my hands, I have never had any trouble with it. I first used the ordinary insulated needles such as could be obtained twenty years ago. They were covered with shellac to the point and they required a great deal of pressure to force them through, and caused an inverted cup at point of entrance. To obviate that difficulty I used gold wire, as I could not get iridium. I got a piece of spring wire to make springs of and I coated this with successive layers of collodion and then I got the smallest possible trocar which could be fitted to a canula and I then introduce my trocar and canula and I have a perfect insulation without skin contact. I brought them North and showed them to Mr. Bartlett, and since that I have always used that form. It is very small and you have no skin contact, and you have no recurring sore and can use it anywhere almost. You can regulate the depth of the puncture by the stop on the canula, and if some of the gentlemen here were to try it, I think that they will find it useful in hydrocele and other things.

As to the question of the value of the pole as applied percutaneously: It is a question of a good deal of polar effect, and that must not be lost sight of. When you speak of a particular electrode we do not say where we put them, and I believe before a great many years have passed we will classify our tumors. I do not think that they are always electro-negative or electro-positive. Again, wherever we want specified polar effects we should of necessity place the indifferent pole at the farthest possible point from it. I don't think where you have the two poles within two inches of each other you get the same effect as is obtained when you have them six feet apart. For instance, you have the electrode in the vagina and the other on the abdomen. I don't think you have the same effect as you would have if the other pole was on the foot; you may, but I don't think so.

It is another fact well understood in mechanics that what you lose in velocity you gain in power, and vice versa. I believe that this holds true in the effects of electricity. I believe that you can gain with small currents applied for a long time the same chemical effect as with strong currents a short time. I believe that a certain current will deposit so much silver in a certain time, and I therefore believe that the same chemical effect is produced by small currents a long time as by strong currents a short time. I am not prepared to assert that this is a fact, but I think so. There are a thousand things which come in here, those supersensuous forces which we don't understand, and when the doctor spoke of Dr. Hutchinson's method he touched upon the very soul of psychology.

The remarks of the gentleman from Buffalo, recall to my mind a case which brings up the late Dr. Freeland of Brooklyn, and here again the selection of cases comes in which depends upon a discriminating diagnosis. The physician is born and not made; he must enter into the feelings of the patient, and the time was when the physician had intuition instead of measurement—the thermometer and other instruments which should be used only by mechanics. As I started to say this brings up to my mind a patient who had a fibroid, and was under my care. It was probably as large as a man's head. The patient was suffering a great deal of pain, had considerable fever and was wasting away. Her husband had been, like many other people, dabbling in electricity and he wanted me to puncture. I refused to touch the tumor. I took charge of the case and relieved the patient a great deal, but her husband was in a hurry and he was getting tired and wanted the thing done quickly. He heard of Dr. Freeland, and determined to take her to Brooklyn. I knew that the doctor was puncturing and I told the husband that if he took her there he did so upon his own responsibility. In spite of my advice, however, he took her to Dr. Freeland, who operated on her by puncture and she died in a week.

Dr. Robinson:—I desire to say something in regard to puncturing. I am not a gynecologist and I see few gynecological patients. I am, however, a specialist in electricity. What leads me to make these remarks is one or two ideas brought out in this paper: One is that we can reach these cases without puncture. Where we do not hope to accomplish very much, but where pain is an urgent symptom, it is important to relieve it. I will quote a case I had, and the case was diagnosed as one of fibroid by other physicians, and a surgeon wanted to operate, but the patient was not willing. I am not a surgeon and I do not puncture, as the statistics of puncturing have not been very encouraging. In this case the fibroid was not very large and there was not very much hæmorrhage. The chief symptom was that of excessive pain, and something had to be done. I neither punctured, nor did I use intra-uterine treatment, but I used two large spongio-piline electrodes, saturated with a solution of soda bicarbonate, and put one on each side and passed just as much galvanism through as I could, and that was my limit; and by thoroughly wetting, and I used just as hot water as the patient could stand, I got the abdomen thoroughly soaked and used 200 milliampères. I did this without involving any of the membranes, and I gave her twelve treatments—one every other day. Those severe pains went away and after using twelve treatments running over two weeks, the pains were so much better that she did not mind them; the hæmorrhage had stopped. In that case I took no account whatever as to whether the positive or the negative pole was used; that was not my object—my object was to get the electricity in in order to get the results, and the result was, we got rid of the pain, and I did not have the danger of puncturing or the danger of intra-uterine treatment. Another idea: we do not know how electricity acts, whether it is chemical action or whether it is an indirect action. For a better name I have designated it as a vital action or a stimulation of the nervous force, and of the process of absorption and nutrition. How it is done we do not yet know, and what we call chemical action and electrical action does not cover the ground. There is something beyond that which we have not been able to divine. I hold that the electricity does it, and if I can get it in I do not care, and I think that the percutaneous method is the best.

Dr. Blackwood:—One or two points strike me as important in the paper of Dr. Massey. One is of applying the electricity as near the point where we want it to do the work as is possible. Of course it is easier for those with little experience to see per vaginum than it is to puncture, but I believe that the puncture is far better. As to the fear of bad results afterward from the mere wound in the abdominal walls, it has been shown by the surgeons and laparotomists that where the opening of the abdomen is made aseptically it is not as dangerous as formerly thought. And I believe Dr. Massey is correct in advising puncture as much as possible.

My friend from Savannah spoke of the advisability of of having the electrodes as far removed from each other as possible when we desire to obtain polar effects. I did think some time ago that the poles were used too near each other, and as an experiment I have used the indifferent electrode as far from the uterus as possible; but it was not that I expected to get a more decided polar effect in doing that, but to get away as far as possible from influencing the abdominal sympathetic. I have seen some disastrous effects in using galvanism in fibroids, which I consider were due to the close proximity of the solar plexus. But in the simple experiment which I have performed, for instance, by using a piece of meat one inch thick you get the poles very close together, and yet you get absolute polar effect; so that as to polar effects I do not think it makes any difference how close they are together. Another point is, I have never been able to satisfy myself that very mild currents of from five to ten milliampères will produce the same effect, no matter how long continued as a decided current. There is a great deal in jugulating a thing. Many things have been played with; as, for instance, the use of antipyrene in five grain doses, when twenty or thirty grains would settle it at once. I have used electricity in delicate ladies, very mild currents and prolonged administration, and repeated more frequently than I would powerful currents; but I do think that there is a tendency to try too small doses. It is not only the administration of it, but the mode of its administration, and we have been losing sight of the quantity of electricity. I think it is valuable, and, so far as I am concerned, always want to know just how much electricity I get into the patient.

Dr. Massey: I feel complimented at the discussion which has followed the reading of my paper. We cannot come to any conclusion at this time in regard to the subject; we can only suggest and add to each other's personal acquaintance with it.

It has been said by some that this method by puncture is dangerous, and that possibly in sending it out to the electro-therapeutic users throughout the world greater caution should have been urged, for we all know that the method of Apostoli has been sadly abused by many. One of the dangers, of course, and one which has not been very much mentioned, is that of including the intestines in the puncture through the abdomen. By inadvertence, puncturing the convolutions of the intestines which have become adherent to the tumor and got between the abdominal wall and the latter, will sometimes occur. I had some fears on that subject, and a few days ago, when I was in Washington, I had a conversation with Dr. Emmett upon it. He spoke of a case—that of an ovarian tumor—which upon his opening the abdomen was unexpectedly found to be overlaid by intestines to such an extent that the operation was abandoned. There was no resonance there, and there were no gases. That would have been one of the dangerous cases. There is also danger of sphacelation of the tumor, due to the eschar. So far as I have seen, in the cases which I have had, none of these complications have arisen.

The possibility of this method seems to me illimitable. May not some of the troubles of the persons who have used abdominal puncture been due to the fact that both poles were used with a current of necrotic power? This, of course, in addition to the possibility of sepsis. I see no reason, if it is used carefully and the point of the needle made aseptic, why negative puncture may not be carried out without a chance of sphacelation, as it is well known that the alkaline products which collect at this pole are easily absorbed, thus presenting an ideal method of immediate reduction in addition to the galvanic effects proper.

(*To be continued.*)

MISCELLANY.

The Characters of the Present Pandemic of Influenza.—According to observations made at recent meetings of the Berlin Medical Society, it would seem that the epidemic of influenza began there during the first week of November, the earliest cases admitted into hospital having come under treatment on November 7th. Ruhemann stated that the most noticeable difference between this and the other recent epidemics has been the large number of women and children, and the small number of outdoor workers attacked. Guttmann mentioned an instance in which the admission of a single patient from influenza was shortly followed by the occurrence of 13 fresh cases. Fränkel, who took notes of 138 cases, found that only 9 (6.5 per cent.) had suffered from the disease before. The chief complications have been pneumonia and heart failure. The effect on the death-rate in Berlin has not been so marked as during the last epidemic, but it has been considerable (27 per mille as compared with an average of 18). In other parts of Germany the effect has been more marked; thus official statistics show that the death-rate has been doubled, or nearly double, in several towns. It rose, for instance, to 44 in Posen (average 21), to 45.6 in Frankfort-on-Oder (average 23.2), in Bremen to 34.3 (average 17.1), and in Rostock to 33.5 (average 15.6).—*Brit. Med. Jour.*

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 2, 1892, to January 9, 1892.

First Lieut. James D. Glennan, Asst. Surgeon U. S. A., is granted leave of absence for one month, on surgeon's certificate of disability, with permission to go beyond the limits of the Department.

Capt. Samuel A. Robinson, Asst. Surgeon U. S. A., granted leave of absence for twenty days, to take effect on or about January 2, 1892.

Major Alfred A. Woodhull, Surgeon U. S. A., having returned to the United States, is relieved from further duty and station at Ft. Sherman, Idaho, and assigned to temporary duty in New York City.

Major Julius H. Patzki, Surgeon, and Capt. Henry G. Burton, Asst. Surgeon, having been found incapacitated for active service by army retiring board, will proceed to their homes, and on arrival there, report by letter to the Adjutant General of the Army.

Major James F. Kimball, Surgeon U. S. A., is granted leave of absence for six months, with permission to go beyond the sea, to take effect on or about January 27, 1892.

Capt. Jefferson R. Kean, Asst. Surgeon U. S. A., leave of absence on surgeon's certificate of disability is extended three months, on account of sickness.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending January 9, 1892.

Asst. Surgeon M. R. Pigott, from hospital, Mare Island, Cal., and to U. S. S. "Baltimore."

Asst. Surgeon E. R. Stitt, from U. S. S. "Baltimore," ordered home, and two months' leave of absence granted.

Asst. Surgeon M. S. Guest, to the Navy Yard, Norfolk, Va.

Medical Inspector C. H. White, from the U. S. S. "Charleston," proceed home, and granted two months' leave.

Surgeon J. B. Parker, ordered to the U. S. S. "Charleston."

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ORIGINAL ARTICLES.

REPORT OF TWO CASES OF HYDROPHOBIA, WITH POST-MORTEM EXAMINATION OF ONE CASE.

Read before the Tri-State Medical Society at Angola, Indiana, July 11, 1891.

BY G. W. McCASKEY, A.M., M.D.,

Professor of Theory and Practice of Medicine, and Clinical Diseases of the Chest and Nervous System, Fort Wayne College of Medicine, Fort Wayne, Ind.; Fellow of the American Academy of Medicine; President of the Fort Wayne Academy of Medicine

Cases of hydrophobia are fortunately so very rare, and the pathology of the disease so little understood, that I do not think any apology is necessary in offering the following contribution to the subject. The first case, alone, fell under my personal observation. A brief synopsis of the second is presented, which, while very imperfect, is yet believed to serve the purpose of giving a clinical picture in outline.

Case I.—On June 27, 1891, I was called in consultation with Dr. N. R. W., of Coesse, Ind., to visit Mr. R. D., æt. 76.

The patient, a well-to-do farmer, had sent for Dr. Wenger on the evening of June 25, because of a feeling of oppression in the chest which had troubled him all day.

From Dr. W. and the family I obtained the following history:

About six weeks previously he had been bitten by a pet dog, which had been around the farm house for a long time, and had always been quiet and peaceable in its manner. The patient had observed that the dog did not appear well, and suspected that some some one had poisoned him. The dog's appetite had not appeared good, and the old gentleman was engaged in coaxing him to drink some milk. While engaged in this kindly attention, the dog, without the slightest provocation, suddenly snapped at him, biting him quite severely on the back of the right hand. The wound was a couple of inches in length, and situated over the ulner side of the dorsum of the hand, near the metacarpo phalangeal articulation, and bled profusely. He went into the house and bound it up tightly, thus stopping the hæmorrhage in a very short time. About half an hour afterwards, upon going into the yard he noticed the dog standing there, gazing intently and vacantly in the distance. While watching him he started off into an adjoining field, and so far as can be ascertained, was never seen by any one afterwards. No suspicion was aroused by the peculiar behavior of the dog, and the wound healed readily in a few days and was forgotton.

He seemed as well as usual for a couple of weeks, but during the remaining interval of four weeks, was troubled with a slight pain, or rather distress, in his head. This distress in his head seemed rather in the nature of a fulness, but was not regarded as of sufficient importance to require the advice of a physician. It may possibly, however, have been of considerable severity, as the family were noticeable for not engaging a physician unless the illness was unusually severe.

No other symptoms whatever could be recalled by the patient or his friends, until the evening of June 22, five days before I was called. He then observed a weakness of the right hand, which he attributed to over use, as he had been plowing corn during the day and thought he had used it too much. This was at once shown to be improbable by the fact that in plowing corn he said that he used both hands practically in the same manner, so that one hand would be as likely to tire as the other. The patient was furthermore right-handed, which would give increased strength to this arm from greater use, and make it still more improbable that this weakness was due to fatigue.

It was also associated with some pain in the right hand, arm and shoulder, all of which increased until the 25th inst., when he was unable to use the arm at all. From this maximum of paresis the arm partially recovered until, at the time of my visit, he had considerable use of it, although distinctly paretic.

During the day of June 25, he observed a feeling of oppression in the chest, as though it were an effort for him to get his breath. This became so marked by evening that it led him, as above stated, to send for Dr. W. Upon his arrival he found the patient with a temperature of 100°, pulse 92, with some nausea and occasional bilious vomiting; these were the only symptoms, besides the paresis of the right arm and the oppression of the chest, as above noted. The nature of the case was, of course, at this time not suspected, as there were no symptoms which would suggest hydrophobia, and the knowledge of the dog bite was not then in his possession. He prescribed some medicine, exactly what I do not know, which was given in teaspoonful doses at intervals of a couple of hours. The patient took this medicine regularly until 2 o'clock in the morning, when the difficulty in respiration was noticed for the first time to be increased by the act of deglutition. From this moment the pain caused by swallowing was so great that practically no food or drink was taken.

When I saw him his temperature was 97.4° and his pulse 100; tongue dry and slightly coated; the knee jerk normal; no wrist reflex; pupillary reflexes for light and accommodation, both normal; bladder and rectal reflexes normal. In the interval between Dr. W.'s first visit in the evening of June 25, and my visit at 2 P.M. on June 27, there had been no material change in the patient's condition. In the intervals between the attempts to swallow, he was comparatively comfortable, and at the time of my visit seemed entirely rational, and in fact, did not impress one as being very ill, as he sat down upon the edge of his couch and walked around the house from one room to the other with perfect ease. There was in fact no peculiarity in his gait or manner or physiognomy, excepting a slight appearance of anxiety caused by the persistent feeling of oppression already referred to. He was perfectly rational and composed in his manner and a casual observer might have talked with him for half an hour without noticing anything whatever the matter with him, mentally or physically. After completing the physical examination and getting a full history of the case, a glass of water was procured and carried towards him where he was sitting, for the purpose of producing the spasm in order that I might observe its character. As Dr. W. entered the room with the glass of water and approached the patient I watched him closely and noticed an increasing expression of dread settling over his face, which, by the time the glass was reached out for him to take, amounted to a look of extreme terror. He pushed it away with his hand, saying he could not possibly take it then, but would in a few minutes if there was not so much of it. All of the water was then thrown out excepting two or three teaspoonfuls, which was handed to him, and which he threw with a quick, spasmodic effort into his mouth and quickly handed the glass back to the physician. He then made an attempt to swallow, which was unsuccessful, but which induced the most violent respiratory spasm that I have ever seen. He sprang to his feet in great agony and ran back and forth through the room, two or three times, vainly trying to swallow the water; finally after about one minute's time he sat down saying that he had at last succeeded in swallowing it, and in a few minutes was as calm as before, although looking somewhat more anxious. I advised injections of morphia, combined with rectal nutrient injections and ice over the back of the head and neck, for the purpose of lowering the reflex irritability of the medulla, to be followed by curare injections as soon as the curare could be obtained. We left the house at three o'clock, and as it was necessary to send some distance for the purpose of procuring what was needed to carry out the treatment, he was not seen again for six hours. There was no material change reported by the attendants in his condition, until about 8:30 that evening, excepting that the respiratory spasm became more frequent and more severe, occurring independently of the act of deglutition. About this time he became maniacal and left the house when not closely watched, and was found shortly afterwards in the garden in a very vicious state, with stones in his hands, which he threatened to throw, and finally did throw at those who were trying to capture him. He then ran out into the road and started towards town. After a short chase one of the party overtook him and pushed him down, running past him at the same time. The patient arose very quickly and started in pursuit of his pursuers, who, respecting his threats of using knife and stones, kept a safe distance in advance until after running about half a mile he fell, fully exhausted; he was secured with considerable difficulty, by tying him with ropes, and was then conveyed back to his home. The respiratory spasms were almost incessant, although he was well narcotized with morphine, until 8 o'clock, A.M., June 28. There was then an interval of two hours during which he was comfortable and rational. He was then induced to take a couple of tablespoonfuls of gruel, but it immediately excited the spasms which continued with unabated severity until 7 P.M. the same day, when he died. Owing to lack of both telegraphic and railroad facilities on the day of the 28th, which happened to be Sunday, I did not see the patient a second time. At the request of Dr. W., I went to Coesse, and made a post-mortem examination June 29, twenty-four hours after death, of which the following are the notes:

Body fairly well nourished. Rigor mortis well marked, limbs very stiff. Numerous ecchymotic spots, size of quarter to half a dollar, located on arms. Extensive hypostatic congestion of skin over dependent (dorsal) portion of body and lower extremities. The skin over this area was almost purple.

Calvarium of ordinary thickness and consistence. Dural adhesion to vault of cranial arch remarkably firm. Could scarcely remove the skull cap at all. By throwing my entire weight upon it, and pulling as hard as I could for a considerable time, the adhesions slowly gave way, and the skull cap was removed. In removing it the superior longitudinal sinus was torn open and two or three ounces of *fluid* venous blood was poured out. The basal dural adhesions were likewise exceptionally firm and the basal cortex was considerably lacerated in the process of removal.

In removing the brain the cord was severed as low as possible, and I then proceeded to remove the spinal cord, by cutting out the spinous processes with their laminæ as far down as the 8th or 9th dorsal vertebra. The remainder of the cord was not removed because of exhaustion, as I had been compelled to do the entire work myself, and was much fatigued before commencing.

The external surface of the dura mater was, of course, greatly roughened, corresponding to its extensive adhesion to the cranium. Upon removing the dura, the pia mater presented a remarkably normal appearance. There was no trace of congestion. Upon removing the spinal dura the pia mater was found for the most part normal. Along the lower half of the dorsal cord, half a dozen linear ecchymotic spots were found, from a quarter to half an inch long.

Abdomen. Great distension of mesenteric veins. Peritoneum generally injected. Intestines were normal excepting a marked vascular injection. The kidneys were both somewhat atrophied, the right more than the left. Capsules not adherent. Intense venous congestion of cortex, which was almost black. Both renal pelves contained a quantity of frothy fluid. On the convex surface of right kidney was found a small cyst, half as large as a pea, which was filled with a dark fluid which did not look like blood, and which left upon the surface of the kidney after it (the cyst) had been opened a pit or depression nearly as large as the external projection of the cyst; two or three smaller ones on the other kidney.

The spleen was intensely congested, and of course correspondingly enlarged. It was also remarkably fragile, breaking easily under the slightest force. In reaching under the margin of the abdominal wall, I had evidently lacerated it extensively (although no unusual force was exerted) for the first view which I obtained of it was strikingly like that of a large dark blood clot. My first impression was that there had been an internal hæmorrhage; and I was only undeceived after I had removed the spleen and found that what appeared to be a blood clot was really its lacerated under surface.

The posterior portions of both lungs were very dark with hypostatic congestion. Numerous small hæmorrhagic infarctions were found scattered through both lungs.

Heart normal in size and consistence. Right cavity well filled with semifluid blood, left cavity entirely empty.

The diagnosis made on June 27th by myself, and concurred in by Dr. W., was that of hydrophobia, caused by the bite of a dog some weeks previously. To venture upon the diagnosis of hydrophobia in a community where a well authenticated case had never been observed either in animals or man, so far as I could ascertain by the most careful inquiry, was, it must be conceded, a rather bold conclusion. But the symptoms, while not absolutely unmistakable in their import, were yet characteristic.

It would be quite possible, of course, for spasm of the respiratory passages to occur synchronously with, or as a result of the act of deglutition, independently of rabies. And this, so far as the clinical picture presented at the moment of my visit is concerned, was the only conspicuous feature. In the absence of any history, therefore, a positive diagnosis at that time from an examination of the patient alone would have been impossible.

But in addition to the characteristic symptoms present there was a definite history of having been bitten by a dog that was ill at the time, and which, within an hour after inflicting the bite, disappeared under circumstances which created a strong suspicion of rabies. Here again the mere circumstance of a dog biting his master, towards whom he had theretofore always manifested the kindest feeling, and then suddenly disappearing would only create a suspicion, but would not constitute a proof of rabies in the dog. But when these two circumstances were taken together, the one following the other in the proper time to form the incubative period, they constituted very strong if not conclusive proof of the existence of rabies in both cases.

At this stage of the disease the question of lyssophobia had to be considered. It was excluded by the fact that the patient attached no importance whatever to the bite, from the moment that it had healed up, onward. So far as could be judged he had no thought or conception of hydrophobia. When the circumstances of the dog bite were recalled to his memory he "pooh poohed" the idea of its having any significance. He would strike his breast with his closed fist saying that his trouble was all there, and that there was nothing the matter with his hand. The dread of hydrophobia, acting upon his nervous system through the psychical sphere, could therefore have had nothing whatever to do with the case, and lyssophobia was thus positively excluded.

But whatever doubt there might have been was dispelled by the tragical denouement of the case. The existence of ordinary mania was positively excluded by the rapidly progressive nature of the case. To quote the words, or at least the idea, of Gowers: "No case of insanity ever becomes dangerous to life in a couple of days." Thus the exclusion of the ordinary forms of insanity gave increased strength to the diagnosis of its hydrophobic nature. Finally the post-mortem examination sustained the diagnosis by the negative findings in the nervous system, with the exception of a few ecchymotic spots upon the pia of the dorsal cord. The changes described are principally those of asphyxia with its attendent engorgements. It is worthy of note that the pia mater of the brain was quite normal in appearance, and showed no post-mortem signs of the congestion which was manifested in other organs, and which the mania would have led us to expect most of all here.

The temporary paresis of the right arm which, after existing two or three days, reached its maximum on the day of the first manifestation of rabid symptoms, and from which there was partial recovery during the remaining two days of his life, was evidently peripheral in its origin. This is corroborated by the pain of which the patient complained in the extremity, indicating the involvement of nerve trunks in which both sensory and motor fibres were blended. A dissection of the brachial plexus, and its branches, had time and circumstances permitted, would probably have revealed some grade of neuritis or intense neural congestion such as have been described in the vagus and other nerves by different observers.

Some injection experiments were undertaken in rabbits, with the assistance of my friend and former pupil, Dr. C. M. D. Magnus. I procured a small quantity of saliva at the time of my visit, when, it should have been stated, the flow of saliva, previously excessive, had almost ceased. There proved to be only ten minims, which was injected by Dr. Magnus with antiseptic precautions in the back of the neck instead of arachnoid space of a rabbit, on June 29th, 1891. The rabbit remained perfectly well, playing and eating as usual, and was last seen in this condition on the afternoon of July 8th. On the morning of July 9th, about fifteen hours after having last been seen alive and well, it was found dead, in a position of extreme opisthotonos, with the limbs rigidly extended, as though it had died not of paralysis but in spasm. It was my intention to have further injections made with the spinal cord of this rabbit, but certain circumstances caused a delay of 48 hours, and when the spinal cord and cranial cavity were opened, although it was in a cool cellar, both the cord and brain were converted into a putrid fluid, which would of course have killed by septic poisoning long before rabid symptoms could have ensued. Further experiments were therefore abandoned.

Case 2.—This case recently occurred near Pierceton, Ind., some twenty miles from the case that I saw, and I am indebted to Dr. C. R. Long for a very careful and painstaking account of the case, of which the following is an abstract.

Dr. Long was called to see his patient, a farmer about 55 years old, on July 7th, 1891. The patient had been suffering for several years from chronic hepatic trouble, and regarded this illness as one of its consequences or rather exacerbations. His temperature was 100, pulse 95, weak and very nervous; difficulty in swallowing and labored respiration. Condition on July 8th unchanged, excepting increased difficulty in swallowing. When approached with a spoonful of medicine, the doctor informs me that he kept his eyes shut, as the sight of anything for him to swallow caused the feeling of cramp in the throat and chest. All history of dog bite was denied until, after much questioning, it was ascertained that in April, 1891, he had been bitten on the hand by a pet dog who had strayed away to a neighbor's house and been brought home by one of the neighbor's children. On the same day of the bite the dog was found engaged in his favorite amusement of chasing chickens, and upon scolding him for this, and throwing some missile at him, he started off through the fields, and was not seen afterwards.

On the morning of July 9th, his condition was unchanged until 11 A.M., when he had a slight convulsion and twenty minutes later a harder one, shortly after which time he eluded his watchers and ran to the woods, wandering about a mile and a half and hiding in a dense tamerack swamp, where he was finally discovered, terribly lacerated with briars, etc., begging his friends to kill him. He was then narcotized with injections of morphine, but two hours later had another convulsion in which his attendants say that "he frothed at the mouth and snapped his jaws together, but made no effort to bite or injure any one." Dr. Long unfortunately saw none of these convulsions. Three or four hours later the convulsions recurred and continued to recur frequently until 6 A.M., July 10th, when he died. Dr. Long was unable to obtain an autopsy.

Human rabies in this country is almost invariably contracted from dogs. Now, if rabies may continually exist among animals liable to communicate the disease to dogs, then the constant presence of unmuzzled dogs on our streets, in our yards, in our houses, constitutes a standing danger which may at any time produce disastrous consequences upon human life. This danger can be averted, and human rabies practically stamped out of existence by either annihilating dogs or keeping them muzzled.

One cannot help reflecting upon the significant and menacing fact that a case of hydrophobia can arise in a community like a clap of thunder out of a clear sky. Whence came it? Why do not more cases occur? How soon will some rabid animal, coming from nobody knows where,and going to nobody knows whither, signalize its brief career by leaving behind many cases such as the one which it has been my misfortune to be able to record? As above indicated, there has been no well authenticated case of rabies observed within the memory of anyone who has seen fit to speak upon the subject. May it not be that the disease has been propagated and kept in existence by some of the wild species of our indigenous fauna; such as the rabbit, skunk, squirrel, woodchuck, etc., and by them occasionally transmitted to dogs? These animals would not bite the dog, who is their superior and hereditary foe, except in self defence when attacked by him. This would only occur at rare intervals, and if we may judge by the statistics of human subjects bitten by animals which are known to be rabid, only a comparatively small percentage of those dogs bitten by rabid animals would contract rabies. Again may there not be many more cases of hydrophobia among dogs than is commonly supposed?

It is impossible to tell who, or how soon will be the next victim of a disease which has in its ensemble no counterpart of terror in the entire nosological list. Is it not time that something should be done? If it is too much trouble to keep the dogs muzzled, then dispense with the dogs.

Minimum doses of strychnia act well in nocturnal incontinence of urine.

A CASE OF COMPLICATED LABOR.

BY J. F. JENKINS, M.D.,

OF TECUMSEH, MICH.

Mrs. G., aged 21 years, a pripara, had suffered som inconvenience, as she stated, on account of her limb being swollen, but otherwise was in good health. My first visit to the patient was about forty-eight hours previous to labor; the membranes had ruptured previously while the woman was about her work, and a large quantity of water escaped per vagina, although it was not preceded or followed by pain. The patien did not complain of headache, nor were there any nervous symptoms present, yet the face and limbs were œdematous, and would pit upon pressure, which was ascertained from examination of the urine to originate from nephritis. An examination per vagina found the cervix dilated to the size of a ten-cen piece. I left the patient, after instructing the attendant that whenever a change should take place in the condition of the woman to immediately inform me The following morning I received a summons to see the patient, but upon my arrival found no change The next morning I again received a message to visit the patient, and when I arrived, was informed that she had a convulsion a few minutes before. The attendant stated that she had a few labor pains, bu that they were not severe. A vaginal examination found the os dilated to the size of a silver dollar, and a slightly fluctuating tumor presenting.

The woman had a few labor pains when under the influence of chloroform, and was again seized with a violent convulsion, which was prolonged for some time. Remaining in a comatose condition, she was placed in position, and after some difficulty the forceps were applied, and I succeeded in delivering the breech, with a large tumor attached, to its surface: or, in other words, I was successful in delivering the tumor with the child attached to it. The forceps slipped from their grasp, but they were readily applied, and the woman rapidly delivered of a viable female child, which was immediately separated from its placental attachment.

Profuse hæmorrhage from uterine inertia immediately followed the expulsion of the child, and a teaspoonful of Squibb's fluid extract of ergot was ordered to be given by the mouth, but the patient had not sufficiently recovered from the convulsions to swallow the medicine. Upon passing the hand into the uterus it was found that the placenta was attached to its walls; the attachment was carefully separated by the finger, and the placenta removed. while the left hand grasped the uterus, making firm but gentle pressure in order to induce contraction. The foot of the bed was immediately raised, and as soon as possible ergot was administered hypodermically. Repeated hypodermic injections of ergot, together with gentle kneading of the uterus, eventually succeeded in bringing about permanent contraction and controlling the alarming hæmorrhage, but not until the patient was almost pulseless at the wrist. Hypodermic injections of brandy were now given, which, after being repeated several times, succeeded in restoring the pulse. From this time forward the patient made a good recovery, without a single unfavorable symptom.

The child lived a few hours, and the following day a post-mortem examination was made, in order to ascertain the nature of the growth. The tumor was oval in shape, and the skin which covered the greater portion of it resembled that of the body of the child, excepting toward the apex, where it was a light blue color, thickly interspersed with enlarged veins. The tumor measured at its base thirteen inches in circumference, one inch more than the circumference of the head. Its attachment extended over the buttocks of the child, crowding the anus between the limbs and permanently flexing the limbs at right angles with the body. The tumor was larger than the child's head, and sufficiently firm to withstand the strong traction on the forceps which was required in the delivery of the tumor and the breech of the child. There was no pedicle to the growth, and it was impossible to make out the attachment by a mere inspection. The apex was slightly fluctuating, and upon making an incision into it several ounces of fluid mixed with blood escaped. Carrying the dissection toward the coccyx, it was found that the growth was largely composed of multilocular cysts, containing fat and a gelatinous substance. It was attached to the coccyx and the anterior surface of the sacrum, but there was no communication between the tumor and the spinal canal.

The growth may be classified with the congenital sacro-coccygeal tumors, which frequently grow to a large size, according to a number of well-known authorities. In my experience it was unique, not only on account of its size, but the rare complication of parturition.

CASE OF CHOLOCYSTOTOMY WITH CHOLOLITHOTRITY: DEATH FROM LA GRIPPE ON THE TWENTY-FIRST DAY.

Read before the American Association of Obstetricians and Gynecologists, New York, September 18, 1891.

BY WILLIAM WOTKYNS SEYMOUR, A.B., YALE, M.D., HARVARD,

OF TROY, N. Y.

Formerly House Surgeon of the Boston City Hospital; Member of the American Medical Association; Fellow of the New York State Medical Association; Fellow of the American Association of Obstetricians and Gynecologists; Member of the British Medical Association; Professor of Gynecology in the University of Vermont.

I report this case as a contribution to the operative history of gallstones, and that it may be fairly judged. The patient, Miss W., 56 years of age, and of very large frame, was referred to me by my father, Prof. William P. Seymour, for operation, the latter part of February, 1891. The patient, always in good health, and a hardworking woman, began in October, 1890, to have sudden attacks of atrocious pain in the epigastrium. Vomiting sometimes, but not always, accompanied the attacks, which varied from a few minutes to several days duration, with exacerbations. There was considerable tenderness of the epigastrium and liver border during the attacks, and clay-colored stools always followed an attack. At no time was there any jaundice, although the conjunctivæ had a slight yellowish tinge most of the time. The urine contained bile after severe paroxysms of pain. Owing to the very much increased frequency and severity of the attacks, and especially to the rapidly increasing emaciation, anorexia and loss of strength, my father urged operation, and after deliberation, the operation was accepted. The patient was plucky, but very much enfeebled for one who had been so strong. The tissues were flabby, but I could find no trouble with heart or lungs, and as to the liver, the examination was negative, save that deep but gentle pressure over the gall-bladder elicited tenderness. The bowels having been freely moved each of the several days before the operation, and a soap bath given daily, I operated on the 20th of March, with the assistance of my friends, Drs. John W. Morris and George Meredith. Squibb's chloroform was used. The anæsthetic was well borne. I made a vertical incision over the gall-bladder, passing through fully 3½ inches of fat in the lax abdominal walls. The gall-bladder was found immediately beneath the upper extremity of the incision. It was contracted, and contained several stones. Protecting the abdomen with sponges, I first removed a drachm of bile by aspiration, and then opened the fundus between two forceps, and removed with Tait's scoop five stones, the size of small buckshot. Another stone the size of a filbert was felt in the common duct, near the junction of the cystic duct, and I found myself confronted with its removal by excision, crushing or needling. Considering the sloppy belly and the great depth of the stone, it seemed to me that excision with subsequent suture of the duct was far riskier than to crush the stone after Tait's method, by forceps applied to the walls of the duct. I accordingly, after failing to break it up with Tait's forceps introduced through the gall-bladder and cystic duct, grasped the duct and stone with a Keith's hysterectomy forceps, and speedily succeeded, with but moderate pressure, in comminuting the stone. Examination disclosed no injury to the duct, and the belly being clean, after washing out the gall-bladder, I stitched it to the abdominal walls with interrupted silk sutures, introduced a rubber drainage tube into the gall-bladder, and closed the abdominal incision with silkworm gut. The wound was dressed with absorbent cotton, the tube shielded with a rubber dam, and over all a four-tailed flannel bandage was placed. The patient bore the operation well, but two hours later had a terrific paroxysm of colic, due to the passage of the fragments of the stone. For this I was obliged, very much to my regret, to give several large hypodermatics of morphine and atropine. The pain was relieved, but obstinate vomiting came on the next day, and I gave repeated doses of calomel. No food was given by the mouth. As the vomiting continued, Monday, the second day after the operation, I gave several doses of salts, which operated and completely changed things for the better. Bile was found in the passages, and but a small amount in the dressings each day for three days, and then the amount reached its maximum, not to exceed 4 ozs. a day, for five days. From this time it rapidly diminished to a mere trace after the eighth day. The appetite returned, with the entire absence of the previously constant pain, and the patient ate and enjoyed chops, steaks, and other substantial things which for months she had been unable to eat. In short, her condition was excellent, and she expressed herself as delighted with the operation. The tube was removed the sixth day. The temperature, which before the operation had been two or more degrees above normal, never exceeded 101° save once, and became normal at the end of a week. The stitches in the abdominal wound were removed the seventh day, and the patient sat up a little the eighth day. Each day she was gaining, and on the thirteenth day was to have gotten out of bed, but in the morning complained of pain all over her, and a very trying cough. Her temperature was 101.5°, and the pulse 120. The condition of the wound was excellent, there being perfect union save at the drainage tube opening. The cough increased so in violence that I feared the wound would tear open and the gall-bladder be torn free. The appetite continued good, the bowels moved regularly, and had it not been for the violent cough and bronchitis, the patient would have considered herself well. At this time the "grippe" had become epidemic, and it was evident that the patient had contracted the disease. Although the cough so improved that I felt very much encouraged, yet in the afternoon of the twenty-first day I was called to her, to find her with an attack of œdema of the lungs, and she died in spite of all treatment. The autopsy was made by Drs. Gordinier and J. W. Morris, Drs. Martin, Meredith, Hutchisson, Clipperly and myself being present. The autopsy showed perfect union of the abdominal walls, save at the drainage opening, the adhesion of the gall-bladder intact; the ducts were patent, and there was not the slightest evidence of peritonitis, suppuration or ecchymoses in or about any abdominal organ. The heart was normal, but both lungs were extremely œdematous, the bronchi and bronchioles of a very deep red and swollen, while at both apices were small patches of catarrhal pneumonia. I knew we were threatened with an epidemic of influenza, but I dare not defer the operation, and I hoped to keep all sources of infection at a distance. Now, as to the method of treating these stones in the common duct, I think the condition of the ducts found at the autopsy justifies my choice of Tait's procedure of crushing. While excision and subsequent suture of the duct seems the more rational procedure, in large, fat and flabby bellies the duct is at so great a depth, that the risk of incomplete suture seems to be as great as that of injury to ducts from external pressure; especially as the pressure necessary to comminute an average gallstone is not very great. They can, in some cases, be crushed in the ducts by the fingers used as pincers, as Kocher, of Bern, has successfully done. Yet, as a rule, it is difficult to fix the stone sufficiently with the fingers alone, and with them to apply the necessary force, owing to the incomplete fixation. In my case, I could pass a Tait alligator forceps through the gall-bladder and cystic duct, and endeavored to nibble away portions of the stone, but I did not make satisfactory headway. Had the forceps had a rongeur beak, perhaps I might have nibbled the stone away. Yet, as a rule, the cystic duct will not admit of the ready passage of so large an instrument. In very spare or emaciated subjects, I can readily believe excision and suture of the duct may be a method of election, but that it has any advantage over crushing in fat bellies and deeply situated ducts, I do not believe. The difficulties in the way of an exact suture seem to me greater than the risk of injuring the soft parts by crushing. As to needling, it cannot compete with either crushing or excision, and perhaps would be best limited to stones so large that they cannot be readily grasped by the forceps, either in the gall-bladder or cystic duct. If, by our attempts to crush a stone in the cystic or common ducts, we have reason to think we have injured the ducts, we can introduce a drainage tube to the suspected point, either with or without gauze tampons. In one case, Mr. Tait so injured the duct that the water used to irrigate the gall-bladder came out of the duct at the bottom of the cavity. He introduced drainage tubes both into the gall-bladder and down to the injured duct, and a perfectly undisturbed recovery ensued. The experience of Shephard, of Montreal, is even more striking, for in his case, being unable to attach the gall-bladder and matted tissues to the abdominal wall, he introduced a drainage tube into the bile-containing cavity, and a rapid recovery followed. In case of excision, unless the conditions were very favorable to an exact suture, I would introduce a drainage tube down to the duct, and endeavor to shut off the abdominal cavity by gauze packing. There is one class of stones to which neither of these methods may be the best applicable, and they are the cases of large stones, either projecting into the duodenum, or lying in the common duct immediately above it. In these cases we may attack the stone from within the duodenum, nibbling it away with forceps if it projects into the gut, or, incising the duodenal part of the duct, extract the unbroken stone. This last was successfully done by Dr. McBurney this year, in a case in which I had a year before urged an operation after a prominent clinical teacher had, by a diagnosis of malignant disease, discouraged all operative interference as unjustifiable. After a year's uncertainties, Dr. McBurney was consulted, and the next day operated. He found no gall-bladder, but a large mass over the duodenum in the common duct. By a free incision in the duodenum, and incising the orifice of the common duct, he delivered a gallstone the size of a pigeon's egg; the intestinal wound was sutured, and a prompt recovery followed.

THE RELATIONS OF THE OS UTERI TO STERILITY IN WOMEN.

Read before the Kings County Medical Association.

BY J. R. VANDERVEER, M.D.,

OF BROOKLYN, N. Y.

It has been facetiously said that facts alone are more unreliable than statistics. However that may be, according to the late Dr. Matthews Duncan, the comparative fertility of the human female "increases gradually from the commencement of the child-bearing period of life until about the age of thirty years is reached, and that then it still more gradually declines," and "that it is greater in the decade of years following the climax of about thirty years than in the decade of years preceding the climax." The same author states that 15 per cent. of married women, between the ages of 15 and 45 years, are found to be sterile; others claim the proportion to be one in 8.5. one in 10, etc.

Sterility chargeable upon the female alone during the period of reproduction is rare in the domestic animals, and when existant is usually caused by some obstruction, congenital or acquired at the uterine introitus. A like state of affairs is probably, in some measure, but not absolutely, true in the case of the human female in a state of natural simplicity of life and habit.

Nature's operations are simplicity itself when the proper conditions exist. In the case of human conception, this is well expressed by the late Dr. Marion Sims in his proposition "that conception must follow in every case in which it is possible for a spermatozoon to enter the uterine canal and come in contact with a healthy ovum, the sole condition required for this being that both the man and woman should be in normal health."

In the paper presented for your consideration I shall not attempt to touch upon all, or even many, of the points relating to the comprehensive subject of sterility in women, but briefly confine myself to the part played by the cervix uteri in the act of conception, and the diseases and abnormalities of the uterine neck, which are responsible for the failure of that physiological process.

Departures from the natural position of the uterus are not of themselves a bar to conception. There may be at times certain conditions in which uterine deviations, notably flexions, may offer obstruction to entrance of the fecundating principal and its contact with the matured ovum, but conception *does* occur in versions, and even in flexions, as experience amply proves.

Dr. Herman Beigel, of Berlin, quoted in the *Obstetrical Journal of Great Britain and Ireland*, Vol. I, states that "we must not so much consider the degree of the version as the determining cause of the sterility as the relation of the lip of the os to the anterior or posterior wall of the vagina, according as we have to do with retro- or ante-version." Hypertrophic growths of the uterus descending into the cervical canal, and growths from the cervical mucosa itself, such as mucous polypi, protruding through and altering the form of the os externum, and rendering it more or less impervious from without, claim but a passing allusion. Stenosis of the cervical canal, either congenital or acquired, has been, it need hardly be stated, considered a potent factor in the causation of sterility, and to such stricture has the greatest attention been directed in the literature of that sterile state for which the female alone is responsible.

The form of the human cervix uteri differs in some respects from that of the domestic animals, notably in the presence of a *true cervix*—that is, in the existence of external and internal ora. In the mare, the os uteri resembles the human os internum, there being no true cervix and nothing resembling the more dense os tincæ of human kind; in the cow, the os extends more into the vagina, and is somewhat more dense than in the mare, but there is no internal os, but there are found extensive mucous folds; the cat possesses the peculiarity of having the cervix longer than the uterus, and rather more dense in structure; and the sow has no true cervix, the uterus being a prolongation of the vagina, there existing a more narrowing between the two (vide Chanveaux, on the Comparative Anatomy of the Domestic Animals, p. 887, et supra).

This peculiar structure of the uterine cervix in our species thus makes it evident that the human spermatozoon has a more difficult journey to reach the uterine cavity than has the spermatozoon in the case of the brutes.

By most writers the os internum is considered the offending point in sterility from cervical stenosis, so it most undoubtedly is in obstructive dysmenorrhea; but experience teaches (at least such has been the experience of the writer) that there is no more difficulty than usual in passing the sound in sterile cases, through the os internum, except in flexions at the level of the os, and even then if the uterus be straightened the sound passes readily enough if patience is exercised. The facts being as stated, as far as the os internum is concerned in sterile females, what is found in relation to the os externum? In the great majority of cases we have a circular or so-called pin-hole os in a more or less conical and elongated vaginal portion, or less frequently in a vaginal portion shorter than usual, but still showing the os circular, small and differing in various degrees from the normal and transverse opening of the os tincæ.[1]

In the anatomical structure of the human cervix the os internum would seem to be sphincter-like, and therefore retentive, while the os externum denser and more cartilage-like, and provided with lips, so-called, and a transverse opening or mouth, would seem to be receptive; that is to say, the os externum is more concerned in *conception* alone, and the internal os (after conception has occurred) in the *retention of the impregnated ovum* during its progressive development until its final expulsion at term.

What is the physiological function of the uterus, including the cervix, in conception? Do spermatozoa, unaided and undirected, find their way into the uterus? These are questions as yet not fully answered, although the German writer Wernich, of Berlin, and Dr. J. R. Beck, of Indiana, U. S. A., claim, partially, at least, to have solved the mystery. With Dr. Beck's paper, read before the American Medical Association June, 1874, and published in the transactions of that body, and also in *The American Journal of Obstetrics*, Vol. IX, probably all are familiar. On this part of the physiology of generation, as Dr. Grailly Hewett puts it, "we must be content to await the further advance of knowledge." Still, *whatever* the modus operandi, a spermatozoon once within the cavity of the cervix, and remaining in a vital condition, *can* (and often *does*, even in flexions) pass through the os internum, which passage is in no case smaller than the uterine opening of the Fallopian tube, through which one or more spermatozoa pass, when *ectopic* gestation occurs, if not in *all cases of conception*.

Thus the peculiar structure of the uterine cervix of the female of the human species—viz., an elongated vaginal portion with both external and internal openings differing entirely in character, and in a degree in structure—renders it a more difficult journey for the spermatozoon to the cavity of the uterus, than in the lower animals, as already alluded to. If it be true that the normal function of the os internum be retentive after impregnation, and that its spasmodic narrowing, causing dysmenorrhœa and sterility, be pathological, it seems only reasonable that some regard should be exercised in remedial measures to the different parts played by these two ora, and care should be taken that their normal functions be not impaired.

Obviously the treatment, when the os externum is occluded by one of the lips, is the removal of so much of the lip as hinders ingress to the os. The treatment by probes of lead or other metal, of Macintosh, fifty or more years ago, was the forerunner of the various treatments by dilatation of the present time. The cutting instruments of various design came in vogue with the introduction by Sir Jas. T. Simpson, of his hysterotome.

The objection to like instruments, as was said by Marion Sims, was that they "cured too much" by cutting too deeply at the region of the internal os, and so, often producing hæmorrhage which might result seriously, if not receiving immediate attention; and the undue potency of the os internum of a uterus so operated upon, was compared by the late Dr. Chapman, of this city, to an inverted bottle without a cork. Rapid and forcible dilatation, so-called, comes next for consideration. This method makes the stress of dilatation at the os internum chiefly, the instrument being introduced closed and then opened out with great force, thus overcoming resistance by tearing, often, as well as simply dilating. It seems to the writer that this method is inferior to that by the knife, in its lack of precision, and by the amount of laceration, which cannot be predetermined.

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[1] Vide Barnes, on Diseases of Women, page 42.

In the *American Journal of Obstetrics*, Vol. vii, page 244, was a short article with a wood-cut of an instrument devised by me, which device I hoped would be of service in the treatment of dysmenorrhœa, and incidentally of sterility. A cut of this instrument is also shown in Dr. Mundé's Minor Gynecology, and commenting on this dilator, the doctor says that it is, no doubt, easy of introduction, but he fails to see its advantages, inasmuch that the other instruments in use dilate the external as well as the internal os, and where the external os alone requires to be dilated, it may be as well done by an ordinary dressing forceps.

I may here state that before I had the instrument alluded to made, I used the knife for transversely widening the os externum (by Peaslee's method) and found that method sufficient without cutting higher, and employed the sound for dilating the internal os. Previously I used an instrument which I had made, similar to the dressing forceps, but much stronger in blade, for dilating the external os, but the instrument failed decidedly, as it either principally expended its force up the *cavity of the cervix*, or when but just introduced by the tip of the blades within the os externum, they either slipped out when an attempt was made at expansion, or made troublesome lacerations. The instrument of my devising, which has been already alluded to, hardly comes under the head of *rapid* and forcible dilators, though forcible it certainly is, as are all dilators in different degrees, but it is neither rapid, not designed to be so. But the claim is first, that it does not require the speculum in its application. Second, that it can be frequently applied, and as I believe with perfect safety, and third, that the patient is not obliged to forego her usual vocation while under treatment.

Dr. Thomas, in his work on diseases of women, in the close of the article on sterility (p. 617) says: "In spite of the fact that we have at our disposal many valuable recourses for the removal of the causes which create sterility, were I asked to mention the part of the field of gynecology which yielded me the least satisfaction and the greatest disappointment, I should cite this." It will thus be seen that phenomenal success has not crowned all measures for the removal of sterility in women.

Personally the writer has not had as many opportunities for the treatment of sterility as those who devote their entire professional work to gynecological cases, but when he has used the instrument for dilating transversely the os externum and probing the os internum, the result has not been entirely discouraging. Doubtless some of the cases have been failures, as the subsequent histories of many of the subjects treated for short periods, have become unattainable. A few cases, however, which have been under personal observation until a final report could be made, I beg briefly to present:

Case 1.—March 10, 1874. Mrs. A. N., æt. 31. Married 1863. Has never been pregnant. Has been troubled with dysmenorrhœa at times severely, with periods of entire immunity. Has been before treated, but not instrumentally. Examination shows the position of the uterus to be normal. The sound passes into the uterus without much difficulty at the internal os. Small and scarcely transverse opening at os internum. Dilator used with difficulty and pain at external os, to as great an extent, however, as the patient could bear without being anæsthetized.

March 14, 20, April 4, and 18, same treatment. July 6, blades opened fully. September 28 and October the same. Shortly afterwards, to her great astonishment, as she had never expected to become a mother, and had therefore adopted an infant, she found herself pregnant. At term she was delivered of a living female child, and another one was subsequently born, when shortly after this she became a widow.

Case 2.—April 12, 1875. Mrs. M., precise age not ascertained, probably 36 or 37. Married two years. Husband was at time of marriage a widower with several children. This patient was in enjoyment of good general health, was well formed inclining of fullness of habit, though rather short in stature. Has no pelvic pains or aches, and alone seeks professional aid for the cure of sterility. Examination shows uterus normal in size and position with the peculiarity of a cervix almost rudimentary as far as length goes, and presenting a scarcely appreciable os tincæ. Dilator was introduced and as much as possible opened. On account of the extreme shortness of the cervix, the instrument had to be passed some distance through the os internum. April 14, 22; June 15; August 9; September 8; December 22; January 10, 22, 1876; February 7; May 24; July 13; September 11, 12; October 16, 29; January 18, 1878; April 17. On June 17 she reported passing two menstrual periods, and thought she had become pregnant. In July she had presumably a miscarriage. Early in the following year she again became pregnant, with a like misfortune at the third month. Subsequently on a visit to the Pacific coast in the following year, she again became pregnant. She again miscarried, but after the *fourth* month. She has not since become pregnant, and menstruation has ceased.

Case 3.—October 1, 1881, Mrs. M. I., age 22. Married April 12, 1881. Has suffered from dysmenorrhœa from the inception of menstruation, otherwise in perfect health. Until the present time has never sought professional advice, merely using domestic remedies and keeping quiet during her periods. After marriage she has been growing steadily worse instead of better.

Examination shows body of uterus normal, exhibiting neither version nor flexion. Vaginal portion of cervix of natural length, but somewhat conical, and there is an approach to the typical pin hole os, no tenderness or induration. Short dilator was carefully and slowly introduced, and gradually opened until pain became pretty severe, closing and opening for three or four minutes. (The shorter instrument here mentioned, was made for me in 1878 for use in cases where the external os alone needed to be dilated, without interference with os internum.) After the use of this shorter instrument, a sound, which had been previously coated with a thin coat of ext. belladonna for a short distance from top downward, was carefully passed through the os internum. October 4, on introducing dilator found that finally I could expand to full extent the proximal part of blades, and keep them so expanded for about half a minute, without much discomfort to the patient. The sound was then passed, as at first visit, but without belladonna; same treatment October 8. October 11, long instrument was used and thorough dilation verified. Pregnancy followed in November and on September 16, 1882, she was delivered by me by forceps, after a somewhat lingering labor, of a healthy female child. Up to the present time three other children, all females, have been born by nature's unaided efforts.

All of these three cases not only, but all others where these instruments were used, were treated without the use of the speculum or anæsthetics.

A SKETCH OF MR. LAWSON TAIT AND HIS WORK.

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(*Continued from page 79.*)

From 1878 to 1881, Mr. Tait gave what is called Listerism a three years' trial. The brilliant achievements of Keith at this time were attained under Listerism. It must be understood that then Listerism included the spray. In those days, it did not mean merely *cleanliness*, but the overshadowing ideas were chemical lotions and the spray. That form of Listerism which included the spray and chemical lotions, he gave a three years' trial, and abandoned it. Mr. Tait said, at the time, he thoroughly tried it for the reason that, if a surgeon lost patients without using the system, he might be condemned by his colleagues. The puritanic idea of Listerism, twelve years ago, was that there were poisonous germs everywhere, and the only way to practice the new surgery of antiseptics, was to cut off every avenue by which the germs could gain access to a wound. But, as I visited the clinics of Austria, Germany and England, I was astonished at the various methods of carrying out the system. It was not uncommon to see the most avowed disciple of antiseptics really omit dangerous avenues of infection by unpardonable uncleanliness. He depended too much on the "antiseptics." On the other hand, in those days, one could see the pronounced opponent to Listerism being more minutely *clean* than its devotee. But Listerism, like Christianity, and all things human, has gone through stages of progress or evolution. The non-essentials of any system soon die out. Besides, the harmful things soon become detected in all systems. So the unnecessary spray, and the harmful chemical lotion, gradually began to be eliminated from Listerism. The birth of Listerism was simply the heraldic gospel of cleanliness. So far as I can see, Mr. Tait's idea of infective germs is based on the view of decomposition. He asserts that if the wound has no decomposing material, there need be no fear of germs; that the decomposing material is the only nest in which germs will thrive. If the wound is cleared of microbic soil, the microbe will and must go with it, for then the germ will neither have house to live in nor food to nourish. Of course, it must not be forgotten that it was urged against Mr. Tait, with a fair show of reason, that he was trying a system in which he had no faith. At the time he was giving Listerism a three years' trial, it appeared to many surgeons that he was using the spray to pronounce its doom, and the chemical lotion to detect the evils in its use; for Mr. Tait said, before he finished trying the method, that the case of the antiseptic system is not proven. Yet during periods of trial of great systems, silence does not always brood over a nest full of eggs, neither does volubility sit on an empty nest. But the test of time is the golden medium that stamps results. So far as I can see by watching Mr. Tait work at the present time, Listerism taught him what it taught the world, and that is, *antiseptic surgery is a gospel of cleanliness.* However, I understand Mr. Tait claims that Prof. Simpson taught the gospel of cleanliness long before Listerism arose. Simpson's laconic way of putting the subject was, that antiseptics would not take the place of soap and water. It is known that Prof. Simpson used to make fun of Listerism. It proclaims that the sin of infection may lie on the hands of neglect. Mr. Tait is announced as an opponent of antiseptics. Yet a description of his present methods will best show in what relation his practices stand to the acknowledged disciples of modern Listerism. The subject of sponges or no sponges has been so often lauded or condemned, that I will describe Mr. Tait's method of using and preparing sponges. New sponges are put in a large quantity of water, to which has been added sufficient HCl to make the water taste disagreeably acid. They remain in this mixture until all effervescence ceases. As the calcium and other bases neutralize the HCl, it may may be necessary to renew several times the HCl. The sponges are afterward carefully washed and made as clean as possible from foreign matter and rough particles. After being used at an operation, they are worked clean from blood, and put in a jar of water, in which there is put a pound of $NaHCO_3$ to twelve sponges. Here they remain, generally twenty-four hours, and then they are worked clean of the $NaHCO_3$. This requires hours of hard work, squeezing and kneading the sponges in large quantities of hot water. They are then put in a jar of 1 per cent. carbolic water for twenty-four hours. The sponges are then squeezed dry, and tied up in a white cotton bag, which is hung up in the kitchen until wanted. One person is alone entrusted with the responsibility of keeping clean sponges. It will be distinctly noticed that the sponges are put in a dry, almost continually hot place, and no principle could be more detrimental to the growth of any germ than *dry heat.* Dry heat and no food will kill any microbe. It will also destroy the soil in which it might grow. These sponges are used many months, until Mr. Tait detects in a sponge some suspicious deficiency, when he tosses it to one side for other purposes.

For ten years the name of Lawson Tait has been a household word in medical circles. He is a very industrious man and though he does an enormous amount of gynecological work, yet he finds time to be one of the most voluminous contributors to the best periodicals in literature. His powerful physique is one of the great instruments which enables him to accomplish so much. His good memory and keen natural powers of observation enable him to systematize the essentials of his work so that he is ready at a moment's notice to produce a valuable article. He generally only writes on living subjects in his own specialty. His attendance at gynecological societies is remarkably frequent for a man with so large a practice. During the past ten years Mr. Tait has widely extended his work. He has extended his surgical operations to other viscera besides the pelvic organs, especially to the kidney and liver. I think he has done over 70 operations for cholecystotomy with some four deaths. One of the deaths was due to pulmonary catarrh three weeks after the operation. Two deaths were due to cancer. One patient died from the operation. His work on the gall bladder has been remarkably valuable and original.

In extirpating the kidney, Mr. Tait, so far as I have seen, always clamps the pedicle. He cuts down on the kidney at its outer border, and draws it out of the wound, places a wire around the blood vessels that form its pedicle, and screws up the clamp until bleeding is stopped. The clamp is then tightened as required during the next few days. I saw him extirpate a kidney, containing about four ounces of pus, from a woman who was five months pregnant, and she made an excellent recovery without miscarriage. The operation which, no doubt, has spread his name the most extensively, is that for ectopic pregnancy. In this operation alone he has erected an enduring monument to himself. He has systematized the treatment of ectopic gestation into that of a surgical operation. For ages men knew that women died from ruptured ectopic pregnancy.

Autopsies demonstrated that these women bled to death just as a woman would bleed to death from an open radial artery. Medical men had watched the red stream of life ebb slowly away, and even a belly full of blood at the post-mortem table had not impressed them with the idea of how to save life. As time rolled on the advance in medicine brought forth the significant expression that in ruptured ectopic gestation the surgeon must cut down and stop the hæmorrhage. But surgeons feared to cut down in these cases because the diagnosis was so *uncertain*. The genius of Tait was shown when he said: "I open the abdomen without minding the diagnosis in these cases." The incision is both exploratory and confirmatory. Mr. Tait distinctly announces that Mr. Hall-Wright, of Birmingham, first gave him the suggestion to remove a ruptured ectopic gestation by abdominal section. But he said he did not at first have courage to act on Mr. Hall-Wright's brilliant and bold suggestion. But time and thought convinced him that surgical laws had no boundaries where hæmorrhage should not be checked whether it be in the brain or belly. As courage increased with experience he began to have wonderful success in operations on ectopic gestations. It was a simple thing to stop bleeding by simply tying a ligature around an artery, yet Ambrose Paré was the first man who did it systematically. So it does appear that it was quite a simple matter to cut into the abdomen and remove an ectopic gestation sac, but Mr. Tait was the first man who put the operation on a generally recognized surgical basis. He has performed over fifty operations for ectopic gestation with a mortality of 6 per cent. He cuts through the abdomen in the median line and then attempts immediately to secure the bleeding point. The gestation sac is drawn out of the wound and ligated off. This is the method for early gestation.

If a large placenta exists he stitches it to the abdominal wound, and drains it. He now announces that he will cut the cord short off at the placenta and close the abdominal wound, leaving the placenta inside the abdomen. If the placenta be absorbed no further operation will be required. If the placenta give rise to septic trouble, a second operation can be done to remove it, when the condition of the patient indicate. Mr. Tait has donated some twenty-five specimens of ectopic gestation to the Museum of Queen's College in Birmingham. So far as I have seen, this collection, with some donated by others, is the finest in the world. An excellently preserved specimen of interstitial pregnancy is seen among them. This is the specimen from the patient on which Mr. Tait operated for right-sided ectopic gestation in 1885. In 1886 she had a child normally, but in 1888 she became pregnant on the left side, in that part of the tube which is embraced by the uterus. As she was doing her household duties she was suddenly seized with acute pain in the epigastrium, and died in about seven hours. The autopsy showed, as the specimen indicates, that an interstitial pregnancy had ruptured through the upper left coruna. Could this woman have had assistance in time she could have been saved by a Porro's operation. Nothing but the removal of the whole uterus would save her. From this specimen also, one can see that this case could not possibly have been diagnosed from a normal pregnancy. Mr. Tait's views are that, so far as evidence exists, ectopic pregnancies are tubal, and that the tube ruptures before the fourteenth week. The rupture occurs either into the abdominal cavity or into the broad ligament. A secondary rupture may occur from the cavity of the broad ligament into the peritoneal cavity. He announces as the cure of ectopic gestation a desquamation of the ciliated epithelium lining the tubes. Deficient ciliated epithelium of the tubes gives rise to deficient transport of the ovum through their channel, and also it permits the entrance of spermatozoa to fertilize the ovum before it can get into the uterus. Mr. Tait has had an unparalleled experience in abdominal surgery, and yet after watching him for months in his daily practice on all kinds of abdominal tumors I have never heard him claim to be able to diagnose ectopic pregnancy. He claims that a man can diagnose with justifiable certainty that an exploratory incision is demanded.

I have seen Mr. Tait operate twice in one day for extra uterine pregnancy, and both women made excellent recoveries. One I saw every day or two for a month, when she left for home. This woman just before the operation looked the picture of a corpse. Two things were diagnosed before operation by various medical men: (*a*) ectopic gestation; (*b*) a rotated ovarian tumor. Mr. Tait opened the belly and found that the gestation had ruptured into the abdomen probably a few weeks before. It appeared to be a fœtus of eight weeks, and had been dead some time. The belly had large amounts of big clots of blood in it. The gestation sac was tied off and the abdomen thoroughly irrigated with quarts of warm water. In this case it looked as if the placenta had gone on growing after the death of the fœtus. The woman got an hæmatocele, which retarded recovery. Dr. Martin opened it through the abdominal incision and washed it out several times with a long double-channelled catheter with iodine water. The high pulse and high temperature disappeared like a charm. At the end of a month she was ruddy and very happy. This was one of the most typical samples of the restoration of health by surgical procedures that one can ever see.

No one can watch Mr. Tait work without observing that he has unbounded confidence in abdominal exploration, and that the diagnosis is to be made and emergencies met after the belly is opened. One of the most remarkable powers of Mr. Tait is his genius in successfully meeting any contingency or emergency that may arise in an abdominal operation. He does not attempt to make a positive decision of what is in an abdomen before exploration any more than a lawyer would attempt to announce the contents of a will inside of a closed box.

One of the most useful operations which Mr. Tait has given to the profession is his flap-splitting operation on the perineum. He often will do this operation in five minutes. The procedure is accompanied by no loss of tissue, and if it fails, which it almost never does, the woman is no worse off than before. He has made an excellent addition to this operation for the purpose of retaining a prolapsed uterus within the pelvis. It consists in extending the flap-splitting up to the urethra. The whole raw surface of these flaps are coated by deep sutures of silk-worm gut. He generally uses three sutures, and does not pass them through the skin, but in the newly cut tissue only. It is the only operation that really restores the original perineal body. Mr. Tait has cultivated Porro's operation with very promising results. He prefers it to Cæsarian section. In performing a Porro he cuts down on the uterus and puts an elastic ligature around the neck of the uterus to control hæmorrhage. He then cuts a little hole into the anterior surface of the uterus and introduces his fingers so as to tear the uterine wound as large as is required. By tearing he avoids cutting into the placenta if it happen to be located on the anterior endometium. The ligature around the neck of the uterus is now tightened, and he pushes his hand through the fœtal membranes and extracts the child. The cord of the child is tied and a nurse takes charge of it. By this time the uterus has contracted much smaller and it is easily drawn out of the wound, and the elastic cord is tightened up so as to form a clamp. Two knitting needles are passed through the neck of the uterus, conically, to fix it in position. The uterus is then amputated and the parietal and visceral peritoneum coapted as carefully as possible. The after treatment is the same as hysterectomy. During my six months' course with Mr. Tait he would show me, with much pride, what he called his "Porro boys," many of which are named after him.

Mr. Tait advocates a Porro for a complete cure of placenta prævia. He also says it is applicable in early cases of severe infection after labor. The operation can be done easily and quickly. He did one of his Porro operations in eleven minutes, and he remarked to me that any ordinary practitioner ought to complete it in twenty minutes. He told me he had done about twelve Porro operations with *no death*. This is simply amazing progress. He kindly made me a present of one of the stumps of the uterus from a Porro, and I have it now in my office. The stump with its pin and rubber ligature is ample evidence of the simplicity of the operation. It seems to me that Porro's operation will have a great future. It will prevent the dreadful mutilations of women in labor, which are followed by fistulæ, unmeasured pelvic mischief and lifelong invalidism I well remember when I used up a whole night in tearing a child away from a woman by piecemeal. I thought surely I had mutilated her so that she would die; but she lived in spite of my terrible work on her. About a year before my colleague had done his best to mutilate her as bad as I did, but she recovered. Two successive and consecutive times did two of my colleagues work together afterward on this woman, with the most terrible struggles to get away the children in small pieces, and yet she got well. Here are *four* of the most horrible operations I ever saw done on a woman, each requiring nearly half a day, yet she still lives. I wonder if she would not have withstood one Porro, which could have been done in fifteen minutes? And by that one Porro she would not only have got rid of all other operations, but would have had one living child instead of none.

In 1889 the first volume of his work on diseases of women and abdominal surgery appeared. This work was generally recognized as the most original of its kind yet published. It represented mainly his own experience in a condensed form. An unfortunate thing to the reader of the book is that it is not systematically classified and very badly indexed. It is to be hoped the publishers will remedy this in the next edition. Some of the most valuable parts of this book are found in the discussions of the uterine appendages. A careful reading of the work suggests that the uterine appendages are subject to more disease than was, years ago, dreamed of. The able manner in which additional testimony is given to Dr. Grigg's theory that much of the fatal puerpural fever is due to rupture of dilated tubes or cysts connected with tubes and ovaries, is very valuable. However this book has been reviewed by the press, we are very hopeful that the second volume of this work will appear in the near future.

During the past five years Mr. Tait has brought out some new views relative to urachal cysts. In fact, he has been an epoch-maker in this department of surgery, putting it on a recognized surgical basis. Up to 1886 he published some fourteen cases. How many he has had from 1886 until now I do not know, but during my course with him he had four very typical ones. This makes at least eighteen of those peculiar dilatations of functionless ducts. They are called extra-peritoneal cysts, Allantoitic cysts, or urachal cysts. They consist of a dilatation of that part of the stalk of the allantois which reaches from the umbilicus to the summit of the bladder. They arise from a nonclosure or non-obliteration of the urachal duct. Their most frequent ætiology lies, no doubt, in fœtal life, but may arise in post-natal life. Mr. Tait divides his cases into two classes, giving as his reasons that in the first set of cases the cyst walls were tougher and could be separated from the other viscera. The cyst walls did not dip down into the pelvis; they thus did not represent the pelvic peritoneum entirely, being rather an anticipation of it in its incomplete growth, which, like it, embracing in folds the pelvic viscera. In the second set of cases of urachal cysts he notes that the cyst walls were friable and brittle and gelatinous; the cyst dipped down into the pelvis; the cyst wall acted as peritoneum to the pelvic organs; the peritoneum itself did not enter the pelvic cavity. Women with both kind of cysts bore children.

We can look at these cysts, big or small, as urachal dilatations simply, or [illegible] iem as formed so early from the allantois that their wall acts really as peritoneum for the pelvic viscera; the view which Mr. Tait favors. The relations of these cysts make it quite impossible that they could be gradually developed so that the cyst dissected off and displaced the pelvic peritoneum, and still hold it in relation to the ovary and fimbriated end of the Fallopian tube. The cyst walls must be looked upon as various degrees of pathological processes, or as entirely two different structures. If the cyst wall be looked upon as really functional peritoneum formed originally out of the allantoitic sac, then a very different process, is to be viewed. Under this view the pleuro-peritoneal cavity will have two diaphragms—a diaphragm in its ordinary place and another at the top of the urachal cyst, generally about the umbilicus. The intestines will not descend below the fœtal constriction formed near the umbilicus and they will really lie between two diaphragms. The pelvic cavity will then be a third compartment in the pleuro-peritoneal cavity. The cyst wall of the urachal dilatation never can be extirpated from its bed. Mr. Tait's reports show the largest experience of any surgeon in this subject. In one of the typical cases in which he extirpated while I was with him, he asked me to examine the interior of the cyst cavity in the abdomen after he had opened the belly. My hand passed into a large open cavity and I felt the intestines pushed away up above the umbilicus and they seemed to be resting on a kind of diaphragm. The lower belly and pelvis was all open. Low down in the pelvis I could feel the uterus confined against the pubes. The tubes ran outward to the pelvic brim. The cyst wall varies in thickness up to that of sole leather. Mr. Tait drains these cysts by circular drainage *i.e.*, a drain tube is passed into the abdominal wound, then through Douglas' cul-de-sac into the vagina, so that fluids can flow both ways. He washes out the cysts with iodine water at first daily and afterwards as required.

Mr. Tait sustains a private hospital for the treatment of his surgical cases. This hospital bears evidence of good ventilation and plumbing. The rooms of the building are partitioned off by solid brick walls. This deadens noises and enables the various rooms to be as quiet as desired. The furniture of the hospital is simple and not excessive. Matting is laid in the halls, and carpets on the stairs. Rugs instead of carpets are used in the patient's rooms. He keeps twenty-five beds which are generally full. Many times no room exists in his hospital and patients are operated on at some private house. This does not include his beds at the Birmingham hospital for women, which so far as I could see were about always full. He keeps twelve nurses in his private hospital. He selects young and intelligent women for nurses, and then he trains them in his own hospital. He seems desirous that they shall be neat, cheerful and interested in the work. It is a matter of surprise what eagerness one of these nurses will manifest in trying to get a case well who has been put in her charge. Each nurse counts, sadly, her death records, and she will often announce with pride how many months she has nursed patients without a single death. The nurses become as anxious and enthusiastic as Mr. Tait, and his assistant, Dr. Martin, in getting the patient over the operation. Also a healthy rivalry exists among the nurses in having the best record of recoveries at the end of the year. One nurse who had been with Mr. Tait five years said she had nursed about fifty hysterectomies with three deaths. Another said she had not one death in a year. Another announced with still more pride that she nursed one year and eleven months without a death. A nurse is given charge of a patient on whom abdominal section has been performed, and she sits up with her for forty-eight hours without sleep, in severe cases, and the nurse is not allowed to leave her for five days. After that the patient is left for short intervals but a bell string is close to the patient's hand which she can pull at any moment. This is connected with an electrical apparatus in the dining room where it is most readily recognized. When a patient arrives at Mr. Tait's private hospital she is assigned to a room generally for a few days before the operation, so as to be thoroughly rested and quiet. It is astonishing to see how patients come from distant countries to this surgeon. Women come from every land under the sun to be operated on. He taps the world's clinic for his patients. The tongue of the orient or of the western hemisphere may be heard in this hospital. Rest in bed for a few days, a vaginal douche, and a slight laxative the previous night is about all the preparation the patient gets for the operation. The nurses are taught how to prepare everything for the operation. The operation is done in the patient's room, where she will remain. Mr. Tait does not have a single operating room. A board about 18 inches wide is laid on two "horses" for a table. It is covered with a blanket. As soon as his assistant, Dr. Martin, puts the patient to sleep one of the nurses calls Mr. Tait from his house, which joins his hospital. He enters the room and at a glance generally satisfies himself if all things are in readiness. Everything is very quiet during the operation.

Mr. Tait stands at the right of his patient. His single assistant is mainly one of his pupils. I will say that the whole duty of this assistant is to keep his mouth shut and to do *only* what he is told, which is astonishingly little. He makes an incision only large enough to admit two fingers. After exploration it is enlarged, if necessary. He insists on the patient being deeply anæsthetized. His acquired skill and dexterity enables him to be very progressive and rapid in his operations. The operation is very often finished inside of ten minutes, while complications, of course, lengthen the time. I have often seen him do abdominal section in between five and seven minutes. It is not at all uncommon to see him do a perineal operation in five minutes. No doubt these rapidly completed operations give the patient better chances for recovery. Shock sinks to a minimum. Mr. Tait does not seem to work so rapidly, but every movement is progressive and forward from the beginning to the end. No hesitation, no dancing about of fingers, no unsettled plans, are observed while he operates. Mr. Tait closes the abdomen with a three-cornered (buckskin) needle, threaded with silk. He uses it without a needle holder, simply pushing it through the abdominal wall with his fingers.

As soon as the operation is finished, Mr. Tait retires, and leaves the patient to the appointed nurse, who soon gets the room in order and the patient in bed, when she quietly goes on with her charge. In no field of surgery is a trained nurse so invaluable as in abdominal surgery. But it requires at least two years of practical work for a nurse to master many of the essential features. I will simply speak of hæmorrhage. One of the golden rules which experience in abdominal surgery has taught us, is that when the pulse gradually and steadily rises with time, and the temperature falls after a section, it is a pretty sure sign that bleeding is taking place. Of course, the glass drain tube, now used by nearly every surgeon, is of inestimable value in bleeding. The nurse carefully watches the pulse and temperature to note their variations. I think an actual sample of a case that occurred in Mr. Tait's hospital, would illustrate the value of a trained nurse. A patient having myoma had her appendages removed, in order to check its growth and profuse hæmorrhage. The removal of the appendages was very difficult, and pedunculated myoma added to the difficulty. Considerable dragging on the uterus was necessitated during the operation. Some hours after the operation, the nurse detected the pulse gradually increasing in frequency. About midnight, the nurse found that the pulse had steadily arisen since the operation, and the temperature began to fall. This rise of pulse and fall of temperature was not fitful nor changeable, but steadily progressive. So she decided that dangerous hæmorrhage was taking place, and sent for Mr. Tait, who confirmed her opinion. He called his assistant and reopened the woman, and found the bleeding taking place from a little rent in the wall of the uterus. He performed hysterectomy, but the woman did not recover.

The nurse must also learn to distinguish between hæmorrhage and shock. That such matters require practical training, may be illustrated by a case I knew, where a pretty fairly educated general practitioner was put to nurse a laparotomy case, and his patient died of hæmorrhage inside of twelve hours. But he did not realize the value of a steadily rising pulse or a steadily falling temperature. It may be of interest to know what plan Mr. Tait follows as a diet for patients after an abdominal operation.

After the operation, if the patient goes on well, not any food or drink must be given, except a very little water; say after the first twelve hours, the patient may rinse her mouth about once every three hours till the expiration of forty-eight hours from the time of the operation. Then ½ pint of milk, with two tablespoonfuls of lime water, "which must be taken in sips about every fifteen minutes." If the patient be given the milk at 9 A.M., and she does not suffer from sickness (stomach), or distension, another ½ pint of milk may be given, with the same quantity of lime water, at 1 P.M. At 5 P.M., very weak tea with milk, also a little dry toast. At 8 P.M., gruel or arrowroot, then she may have a little milk or barley water to drink through the night. The third day add a little milk pudding for dinner. Fourth day add a little fish for dinner. The fifth day, poultry or meat may be given, the sixth day vegetables, and on the ninth day fruits, raw or cooked.

(*To be Continued.*)

SELECTIONS.

Surgical Treatment of Piles.—On the basis of 200 cases of operation on hæmorrhoids, Allingham (*Medical Press and Circular*, 1891, No. 2724) discusses the surgical treatment of this disease.

He divides hæmorrhoids into two groups: the first including those which come down at stool, and those which are almost always in a state of prolapse and bleed profusely at each act of the bowel. In this class of cases the quickest operation is the best, since as a result of long-continued hæmorrhage there is always considerable anæmia, and therefore it is of prime importance that as little blood as possible should be lost from the operation, and that there should be a minimum of risk of secondary hæmorrhage. These requirements are fulfilled by the ligature, which can be applied in a very few minutes, and is practically free from any danger of after-hæmorrhage.

The second group comprises those piles which are chiefly troublesome because of the inconvenience they occasion, since they are prone to come down and prevent the patient taking any active exercise. These piles rarely bleed, and do not otherwise interfere with the enjoyment of good health. Here the great point is to select the least painful operation. The best modes are crushing or simply cutting off the piles and picking up any vessels that may bleed.

In the operation of ligation with incision the pile is drawn down by a vulsellum and separated from the muscular and submucous tissues upon which it rests. The incision is made upon the skin at the junction of the mucous membrane, and is carried up the bowel, so that the pile is left connected by vessels and mucous membrane only. A strong silk ligature is then tied as tightly as possible, and the ligatured pile is returned within the sphincter.

This method is very well suited to piles which are large and vascular, and are inclined to be sessile rather than pedunculated. It should be applied to patients who have any tendency to cardiac or kidney disease, or where there is a thrombosed condition of the vessels. It is the best to use when patients are feeble. Ligature is, in fact, the safest operation. Its drawbacks are that the wound takes some time to heal, there is more pain after operation, and on the first motion of the bowels, than after crushing or simple incision. There is more sloughing or suppuration until the ligatures have separated, and hence there is greater liability to some contraction.

The crushing operation consists in drawing the pile by means of a hook into a powerful screw-crusher, which is tightly screwed up, and distal end of the pile cut off. The crusher should be applied on the longitudinal aspect of the bowel, and should be left on the pile for about two minutes. This operation should be used when the piles are medium-sized and rather pedunculated, and the patients are in good health; but in bad cases it is not so safe as the ligature. In ordinary cases its advantages are that there is freedom from pain after-operation; retention of urine is of rare occurrence; suppuration is not likely; there is little or no pain on the first action of the bowels, and recovery is usually rapid; after contraction is not common. The clamp and cautery are not favored by Allingham. He states that statistics show that it is quite six times as fatal as ligature or crushing; and burning gives more pain after operation, as is the case with all burns. Hæmorrhage is more likely to occur; there is greater sloughing of the rectal tissue. More time is required for healing, and greater contraction is common, as is also the case with all burns. The excision of piles is best applied to one prolapsed pile, to the single perineal pile, so common in women, or to one pile which is complicated with fistula, ulcer, fissure, etc. As a rule, one or two vessels require clipping. It is, therefore, inexpedient to excise many piles, for there may be trouble in picking up the divided arteries.

Allingham believes that Whitehead's excision method—that is, removal of the entire pile area and stitching of the healthy bowel above to the sphincter—is rarely necessary. It is a slow and bloody operation, and is at times followed by contraction. Few cases are really well under three weeks after operation, and premature resumption of the ordinary ways of life may cause a greater tendency to contraction, or what is worse, troublesome and tedious ulceration may supervene and take months to heal.—*Am. Jour. Med. Sciences.*

COFFEE AS A CAUSE OF PRURITUS ANI.—A correspondent thus relates a personal experience: "For many years I suffered from the most aggravated form of pruritus ani, which refused to yield to any one of the many remedies applied for its relief—nothing seemed to have the slightest effect in ameliorating the torture to which the intense itching subjected me. After exhausting the pharmacopœia I began to abstain from certain articles of food; one after another was dropped from my dietary for several weeks, but without effect until coffee was reached. An abstinence for a period of two or three weeks resulted in complete relief from the distressing symptom. As a matter of experiment the use of coffee was resumed for several days, with the effect of reproducing the pruritus; the experiment was tried several times with the same result. A year without coffee has been a year without pruritus."—*N. Y. Medical Journal.*

PARAFFIN IN DIPHTHERIA.—I have treated thirty cases (children and adults) with paraffin, and have had the satisfaction of seeing every one recover. My plan is to ask for the ordinary paraffin used in lamps, and, having scraped off the diphtheritic patch, to apply the paraffin to the throat (internally) with a large camel's hair brush. As a rule, the throat gets well in from twenty-four to forty-eight hours, and with improvement in the throat the paraffin is applied less frequently; but I continue its use for two or three days after the complete disappearance of the patches. In three very severe cases I found that, as the diphtheria gradually disappeared, tonsillitis supervened, which I treated in the ordinary way. I find from experience that it does not do to allow the paraffin to stand in an open vessel; it seems not to have the same curative effect if exposed long to the air. It should be poured out from the can each time it is used. I can speak definitely as to the therapeutic effects, but am unable to state what the chemical action of paraffin on the diphtheritic membrane is; I can only suppose that the hydrocarbons in the liquid exert some powerful influence on the membrane. I cannot see why, as the local action of paraffin is so beneficial in these cases, it should not exert an antiseptic influence if vaporized and mingled with the air in a room occupied by a diphtheria patient.

In conclusion, I would say that I have ordered a generous diet for the patient and a mixture containing tinct. ferri perchlor. and potass. chlor., to be taken every three or four hours, and that in some cases where, owing to the lateness of the hour, there was a difficulty in obtaining the medicine, the throat having been brushed diligently with paraffin, there was a decided improvement in the morning before any of the mixture had been taken, showing that the improvement was due solely to the paraffin treatment.—*Sidney Turner in the Lancet.*

BACTERIA IN DRINKING WATER.—Dr. W. Migula (*Centralbl. f. Bakt. und Parasitenk.*, Bd. VIII., No. 12, p. 353) makes a contribution to our knowledge of this subject which is really a new departure as regards the examination of drinking water. He points out that, although considerable stress has been laid on the examination of water for pathogenic organisms, there is no reliable rule to guide the hygienist in his examinations for the ordinary saprophytic organisms and their relation to the purity of water to be used for drinking purposes. Dr. Migula washes out small flasks with bichloride of mercury; then, after rinsing them with the water to be examined, he leaves a specimen in the flask, which is plugged with sterilized cotton wadding and covered with an india rubber cap. It is not necessary to pack the flasks in ice, as it is assumed that if any of the organisms multiply they will all do so, while if the putrefactive organisms (those that liquefy gelatine) grow more rapidly than the others, independent evidence is obtained of the impurity of the water. Cultivations are made in flat glass dishes in order to save the time required in manipulating plates and tubes during the cooling process. After examining 400 springs, wells, and streams the author has come to the conclusion that where there are more than ten species in any sample of water, especially when these are not species ordinarily met with, the water should not be used for drinking purposes. He found that only in fifty-nine waters was this the case, but that 169 waters contained more than 1000 organisms per cubic centimetre, sixty-six of these having over 10,000 (forty over 50,000). From these figures it will be seen that some of the sources of supply would be condemned by the old method but would be passed by the new, and some condemned by the new would be passed by the old. Migula found in all twenty-eight species, and in a series of tables he brings out the fact that the number of colonies does not by any means correspond with the number of species, though in some cases it undoubtedly does so. This is, in fact, an exceedingly variable quantity. It also comes out that putrefactive bacteria are almost invariably absent from spring water; that they are most frequently found where the number of species is great, and where the number of colonies is between 1,000 and 10,000 per cubic centimetre; that they also occur where the number of germs is below fifty per cubic centimetre, but very seldom where the number is over 10,000.

Dr. L. Schmelk who recently (*Centralbl. f. Bakt. und Parasitenk.*, Bd. IV., No. 7, p, 195) pointed out there is a great increase in the number of bacteria in the water supply of Christiana during the period that the upland snows are melting most actively, now (*Centralbl. f. Bakt. und Parasitenk.*, Bd. VIII., No. 4. p. 102) gives further evidence collected during the last three years in proof of his theory. The numbers he finds for those years were ten or fifteen per cubic centimetre in March to 2500 in April, 1888; 1100 in 1889, and on March 28, 1890, 5000; the breaking up of the winter snows having occurred this year much earlier than usual. This is the period during which the winter snows are melting, and after this is completed there is no marked increase in the number of bacteria in the lake water until the reappearance of the winter snows, some of the earlier falls of which during October, November, and December melt and disappear. In December the number of bacteria per cubic centimetre sometimes reaches 600, the highest point recorded during the year except in March. Dr. Schmelk thinks that the increase is due to the action of frost in breaking up the earth's surface, from which the contained organisms may be set free as soon as a thaw occurs and then washed away along with the surface soil, just as during great rain-storms. He also points out that the masses of ice projecting into a river may form "collecting" points for the particles suspended in the flowing water, as more bacteria are always found in the water obtained from such ice when melted than in the river water itself. He verified this by repeated experiments. He found, however, that when floating ice was melting in water, though it contained a few more organisms than water collected near the surface, it held far fewer than water taken from a considerable depth. In the Christiana water-supply he found some thirty species of bacteria, some of which occurred very seldom, some at certain periods of the year only, and a few all the year round. The amount of solids in the water varies from time to time, between 0.92 and 0.94 grams per litre, and traces of ammonia can usually be found in water during the time that it contains most bacteria.—*Supp. British Medical Journal.*

PURIFICATION OF DRINKING WATER.—The burning question of the present age is how to obtain pure drinking water. In reference to this subject I would refer to a paper recently read by Dr. O. Froelich before the Electro-Technical Society of Berlin, May, 1891, in which he says "that the attempt to destroy bacteria by means of ozone has been effected with water from Berlin and neighborhood, and always with the most complete success. The sterilization test takes place, as is known, in the following manner: A few drops of the water to be tested are placed by means of a sterilized platinum wire on sterilized nutrient gelatine, contained in a sterilized reaction tube closed with a plug of cotton wool. If the water contains bacteria their cultures become visible in the form of opaque grains and tubercles, which continue growing. Even if by such experiments the sterilization of ordinary water is established, it is still doubtful if the less common bacteria, viz., those generating disease—typhus, cholera, anthrax, etc.—and their spores are destroyed. The question can only be determined by experts, although there is every every indication that it will be solved in a manner favorable to ozone.

"The oxonization of water acts besides in destroying noxious or disgusting substances or transferring them into harmless ones. Sulphuretted hydrogen is separated into sulphuric acid and water, ammonia becomes nitrate or nitrate of ammonia, iron is precipitated as ferric-hydrate, and finally, bacteria which generate decay are probably all killed. We have also good reason to assume that even the worst ordinary water can be made drinkable by means of ozonization. Disinfection by ozone has properties not appertaining to other methods of disinfection. In contradistinction to sterilization by boiling, ozonization is quicker and cheaper, and as opposed to disinfection by chemical means, such as sulphurous acid and chlorine, etc., it has the greater advantage of leaving no traces behind it in the water. Of course some ozone is absorbed by the water, but the amount is so insignificant that it is not perceptible to the taste. The ozone gas goes through the water, does its work—*i. e.*, kills the bacilli, probably completely, and leaves the water in the same condition in which it entered it.

"How much ozone is taken up by the water in passing through has not yet been established. Shortly, however, larger apparatus will be prepared which may be considered as models of water ozonization, from which can be determined the working power and cost of ozonization for any quantity of water.

"The solid earthy matter held in suspension by water is not affected by ozone; filtration will therefore be a necessity in the ozonization process. The filtering plants heretofore employed have served not only for the removal of the solid matter in suspension, but have also answered the purpose of collecting the greater part of the bacteria, and this takes place generally by means of the coating of algæ, which is formed on the layer of filtering material. The ozonization of the water, however, answers the purpose of the coating of algæ, but in a much more complete manner. The algæ cannot survive in ozonized water, as has been established by actual experiment, and therefore the laborious upturning of the filtering layer, which has hitherto been the practice in order to prevent the coating of algæ from becoming too thick, is done away with.

"The proper discussion of the ozonization of water can only take place after the cost of ozonization has been more exactly ascertained; nevertheless, so much is thus far apparent, that a fundamental discussion of this question cannot be avoided, particularly in cases in which good drinking water can only be obtained at great cost, bad drinking water, on the other hand, easily obtainable and by ozonization converted into good. The question further arises whether, generally considered, impure water, such as the waste water of towns and factories, cannot be fitly treated by means of ozone. In waste water the bacilli generating decay would in this manner be killed, the ammonia probably converted into nitrate of ammonia and the organic constituents further oxidized as far as possible."—*Electrotechnischen Zeitschrift*, 1891, Heft 26.

COMMON NEUROSES.—In the second Harveian lecture Dr. Goodhart continued his subject of Common Neuroses. He dealt first with paroxysmal sneezing, and showed first how this always occurred in the neurotic, and next how closely connected it is with spasmodic asthma. Facts of this kind afford a strong argument against the probability of any good result accruing from severe local measures such as have been occasionally adopted of recent years. The so-called *angina clericorum* was next alluded to as not altogether above similar risks of being over-treated at the present day. This disease occurs in the over-worked; there is no serious disease of the throat, nothing that requires vigorous treatment of any kind, and all that is requisite is a good tonic and an honest assurance that there is nothing serious the matter. The usual treatment of such cases is to tell the patient that he or she has a delicate throat, and that they must go to the South, which is a sort of verdict of phthisis by *innuendo*. Cold catching is another neurosis, and is to be treated as are the others, by attention to the general conditions rather than by directing most of the attention to the trouble as it develops itself in this or that region. Spasmodic asthma is another of the same group. Asthma can be fostered and nursed into a very terrible disease, and very often is so, while on the other hand much can be done to mitigate the severity, if not to eradicate it altogether by making ourselves familiar with its history. And its history is that it occurs in those who show a well-marked nervous history. Several illustrations were given. Another point is that it so seldom, comparatively speaking, occurs in the lower classes; another, that it is probably represented in infancy by a gastro-pulmonary neurosis, and the treatment of both classes of cases is to be carried on on the same lines. The usual treatment of asthma by inhalations was strongly condemned, as leading in the bronchial mucous membrane to a parallel condition to that of the chronic snuffer, to a chronic hunger for stimulants. And even more than this, remedies of this kind are in the long run murderers in the garb of friends.

Circulatory neuroses were next discussed. The first of these mentioned was the being the conscious possessor of a heart. This condition is largely a nervous one, and it is much aggravated by our rather loose way of judging of a so-called weak heart. The relation of eurotic hearts to actual disease is, however, a very interesting subject, and one by no means free from difficulty. Graves's disease is another neurotic condition, and should receive, in the lecturer's opinion, a much more extended definition than is usually assigned to it. And of central circulatory neuroses neurotic faints were mentioned, and the remark made that they were very commonly attributed to heart weakness, and very seldom were actually so produced. Of peripheral circulatory neuroses Raynaud's disease was taken as a type, in the same way as Graves's disease, of a number of common conditions and disturbances of the periphery, and with these were linked on several diseases of the skin and joints which had interesting relations in this regard.

The lecture concluded by discussing the subject of angina pectoris. In the lecturer's opinion this disease is largely concerned with some fundamental neurotic disturbance in many cases. It has of late been concluded that the immediate cause is a state of high tension in the vessels. This opinion was combated and considered from clinical experience not to be true, for such cases were by no means uncommon where neither disease of the heart or renal disease could be shown to exist. Its possible relation to pain in the left side, so common in anæmic women, led on to a passing allusion to the neurotic association of chlorosis.—*Med. Press and Circular.*

Cure of Myxœdema.—In the Freie Vereinigung der Chirurgen, in Berlin, on 12th October, 1891, Dr. R. Köhler showed a case of myxœdema which presented certain peculiarities. The patient was a woman of 48 years of age, who had become ill in the previous November with rigor and headaches. The headaches were always worse in the evenings. Gradually there came about a complete change of her whole nature, and she became practically demented. At the same time she ceased to perspire, and there developed a callous condition of the skin of her head, neck, and arms. There was also a return of swelling of the glands of the neck, from which she had suffered in childhood. In February myxœdema was diagnosed in Gerhardt's clinique. Later on, in another department, there was suspicion of a tumor present in the neck, being gummatous. On account of the doubtful nature of the case, an anti-syphilitic treatment was adopted, and this was followed by remarkably beneficial results, the patient recovering completely her bodily and mental health. The diagnosis is, therefore, made of syphilitic degeneration of the thyroid gland, and myxœdema originated by such degeneration is, therefore, to be considered a curable disease.—*Deut. Med.-Zeit.*

Polyuria in Sciatica.—In the Société Médicale des Hôpitaux, on 9th October, 1891, MM. Debove and Rémond (of Metz) referred to some cases of sciatica in which they had observed polyuria beginning with the pain and increasing and ceasing with it. One of the patients had had an attack of sciatica some years before, and had noticed the same phenomena then, the quantity having been normal in the interval and the urine being otherwise normal. The quantity during the attack was 105 to 140 ounces in the twenty-four hours.

As to the explanation of this polyuria, it could not be regarded as simply due to reflex action induced by the pain, for it was not observed even in severe facial neuralgia. Certain physiological experiments are quoted in support of another theory—if the central end of the sciatic be excited in the dog, arterial tension is increased, and as a result there is an increase of the urinary secretion. Perhaps this may explain the polyuria in sciatica. Whatever value may be attached to this theory, the clinical fact is claimed to merit attention. At a subsequent meeting of the same society (16th October, 1891,) M. Lépine (of Lyons) recalled the fact that analogous observations had been made by his pupil, Dr. Hugounard, in 1880, and that he had established—

1. That moderate or strong stimulation of the sciatic diminishes considerably, or may even arrest the secretion of urine.
2. Slight stimulation of the same nerve augments the secretion. (Of this they had an apparent confirmation in the polyuria accompanying the neuralgia.)
3. If one of the kidneys is partly deprived of its nerves, the effect of the stimulation of the sciatic is less marked.—*La France Médicale.*

Chloroform as an Anæsthetic in Operations on the Neck.—In a paper on the surgical treatment of tuberculous cervical glands, Mr. Edward Owen, the well known surgeon, makes the following remarks in support of his recommendation that a special anæsthetist should be engaged when anything like serious difficulty is to be anticipated:

"In the whole course of my experience I have never met with an instance in which any child died from the administration of chloroform. But, so far as my recollection serves, the two instances in which I have seen this calamity most nearly approached, were in severe operations for the removal of tuberculous glands from the neck. In each instance I thought the child was actually dead—in spite of treatment by hanging it up by the feet, so as to stimulate the anæmic brain, and at the same time resorting to slow and rhythmic compression of the chest by way of artificial respiration. In one of these cases the father, a medical man of the Edinburgh school of medicine, was administering the chloroform to his child. Acting on the Scotch plan, he was not watching the pulse during the operation; but I must say that he behaved splendidly during the crisis. In the other case the failure of the pulse was noticed by the family medical attendant, who was present during the operation, the anæsthetist having contented himself with watching the respiration only. What it may have been with those friendly associates of the experimental physiologist, when under anæsthesia, the monkey, the dog, and the guinea-pig, I know not; but I am sure of this, that in the human species the pulse is terribly apt to fail before the respiration. And I fear that the teaching of the Hyderabad Commission—that only the respiration need be watched—will be accountable for much faulty administration of chloroform with the inevitable result. It is more than possible that the sudden syncope of these two children during the operation may have been owing to the serious disturbance to which the lungs, vessels, and nerves beneath the base of the skull were necessarily subjected during the removal by enucleation or scraping of adherent masses of gland.—*Practitioner*, November, 1891.

Sunday Funerals in Philadelphia.—For many reasons we can assure those who are interested in sanitary reform that they have the hearty sympathy of Archbishop Ryan, of the Archdiocese of Philadelphia, and that, whenever required, they can count upon his earnest coöperation. The latest evidence of this fact we note in the order issued against Sunday funerals, which provides that *no permits* will be issued *for funerals* to take place *on Sundays, except in cases of extreme necessity.*

When, by reason of death from contagious disease, it is necessary to permit the interment of a body on Sunday, only a hearse or wagon and not more than three carriages will be allowed to enter the cemeteries.—*Annals of Hygiene.*

Oysters and Typhoid Fever.—While we do not believe in creating unnecessary alarm, yet it is our duty to chronicle all that may be advanced in reference to the causation of disease; hence do we note that it is claimed in England that the son of the Prince of Wales contracted the disease from which he has recently suffered by eating oysters gathered from beds poisoned by sewage. In consequence of this scare the consumption of oysters in London has fallen off one-half. Our own belief is that the danger which this story relates is exceedingly problematical, yet it suggests to us the self-evident fact that the oyster, like anything else that is permeated with sewage, is not fit for human consumption. In our own country oyster-beds are usually located quite remote from centres of civilization, hence the popular bivalve is very unlikely to be contaminated by sewage.—*Annals of Hygiene.*

The committee of the British Medical Association on legislation for the inebriate, has reported in favor of endowing proper authorities with power to compel inebriates to be placed in retreats where they will be treated by physicians employing the most approved methods.

Strength and the Hair.—During the past few weeks the discussion as to abundance of hair being evidence of strength, has again come up, some arguing that there was nothing novel in Samson's strength being in his hair, and others that as a rule the strongest men are least blessed with an abundant hair covering. There are necessarily exceptions to all rules, but most freaks of strength of modern times have luxuriant hair. There are five or six women now traveling with dime museum shows, lifting enormous weights with their hands and teeth, and performing other extraordinary feats of strength, and nearly all of them have magnificent heads of hair. Among prize-fighters the same rule applies, and although athletes generally keep their hair cut very close to the head, they usually have a very thick growth of hair and are seldom bald. Ancient history is delved into a great deal in the discussion, but the fact remains that the strongest men of to-day have in almost every instance not only heavy heads of hair, but also quite a substantial growth on the chest and arms. It may be that excessive bodily vigor and activity promote the growth of hair, or that the hair itself is an evidence of strength; but whichever may be the cause and the effect, the combination exists as a very general rule.—*Annals of Hygiene.*

Naphthaline as a new Tapeworm Remedy.—According to the observations of Mirovitch (*Mercredi Medical*), naphthaline is a powerful tæniacide, being superior to other anthelmintics both in the certainty of its action and in the absence of any toxic effect. For children, the author employs the following formula:

R. Naphthaline, 4½ to 7 grains.
Castor oil, ½ ounce,
Essence of bergamot, 2 drops.

—*Indiana Medical Journal.*

Removal of Garbage.—The subject of the removal of garbage is receiving a good portion of discussion. Don't remove it, any portion of it, so the smell of its decay will come back. It is a big undertaking for a big city to remove its garbage in such a way that it will give no offense. Dumping it in a water-course, on a lake or sea, is not getting rid of it to all purposes. In the first case it will wash down and become a pest about another town. In the second or third it will wash back to shore and breed a pestilence there. The surer way to handle garbage is to destroy it. It can then hurt no one, as it has no existence. Piled up in almost any place it will find some way of giving off the evils of its decay to the injury of some one. Destroyed, placed out of existence, it is gone, and there is nothing left. No one will be offended by it, and no means are left whereby it can come into the home or whereabouts of the people. It may not be the best way to serve garbage, but it is a safe way, and at the present time we know of no other that will prove any better.—*Sanitary News.*

The Influence of the Weather.—There are a great many people who say that the weather does not affect them at all; but the weather does affect everybody, writes Dr. Kellogg. When the barometer goes up our spirits go up, and when the barometer goes down our spirits go down. When the barometer is high we get more oxygen and the vital fires burn brighter, and when the barometer is low the reverse is true. It is no wonder that a person subject to rheumatism or neuralgia feels these changes in the weather with particular force. When the barometer rises the skin does more work, and when the barometer falls the skin does less work. When the skin does less work the kidneys, liver, and other excretory organs have to do the work.

But the changes in the weather are exactly what we need as stimulants to the system, and the reason why people who live in tropical climates lack in vigor and wilt down quickly under diseases is that they have none of the bracing effects which come from the changes of temperature.

These may be called a species of physical gymnastics. It is exactly like living a sedentary life in a climate in which there is no change.—*Annals of Hygiene.*

Rat-Tail Sutures.—About five years ago, while resident physician in the Presbyterian Eye and Ear Hospital of Baltimore, I saw Dr. Chisolm use fibers from the tail of an opossum for sutures in some of his eye-work. I thought such fibers a good substitute for silk, and spoke to my brother, Dr. A. M. Belt, about it. Shortly afterward a rat was caught at his residence; he had the tail skinned and soaked for several days in water, after which, upon slight manipulation, it separated into perhaps a hundred fibers, each about eight inches in length. These were placed in alcohol and presented to me, upon request, for use in eye surgery. I found the fibers strong and much finer than those from the opossum tail, or any other animal suture, and have been using them quite extensively in suturing the conjunctiva in pterygium operations, and in advancing the recti muscles in correcting strabismus.

These sutures have been most satisfactory. As soon as moist they become agreeably soft to the eye, and have never to be removed, while silk sutures are rough and irritating as long as they remain in the eye, and their removal is somewhat painful. Patients from a distance are often detained five or six days to have the silk stitches removed, when rat-tail sutures might be used and the patient allowed to depart immediately. These sutures will no doubt be found useful to the general surgeon and gynecologist when they need strong and fine animal sutures. About once a month, for two or three days, I soak the fibers in a corrosive sublimate solution (1:5000), and as I have never had any trouble whatever from their use, I think it probable that this suffices to render them aseptic.—E. Oliver Belt, M.D., in *The Medical News.*

A New Method of Tenotomy.—The following are the steps of an operation which was performed in a case of post-hemiplegic contracture of the flexors of the fingers, by W. W. Keen, of Philadelphia. An incision was made, beginning just above the pisiform bone, and extending three inches obliquely upward, its upper end being over the tendon of the flexor carpi radialis. All the flexor tendons having been exposed, each tendon was first split along the middle for an extent of one inch and a quarter, and then, at the two ends of this incision, section of the opposite halves of the tendons was made; that is to say, the radical half of the vertical slit, and the ulnar half at the other end. The long, loose ends of the divided tendon were then made to glide on each other in a vertical direction over a distance of about half an inch, and sewn together by two transverse sutures. The tendon was thus lengthened to the extent of three-quarters of an inch.—*Med. Age.*

A New Method of Measuring the Capacity of the Stomach.—At the recent Italian Medical Congress, Forlanini (Rif. Med., October 24, 1891) proposed a new method of ascertaining the presence of dilatation of the stomach. He passes an œsophageal sound into the stomach, and by its means distends the organ with air, in no case using a pressure of more than 7 or 8 centimetres of water; the air is then withdrawn by means of an aspirator, and its volume ascertained. By always using the same amount of pressure when injecting, the effects of any treatment on dilatation of the stomach can easily be ascertained.—*Med. Age.*

Doctors in the Legislature.—"In no European legislature," says *The Lancet*, "are there so many distinguished surgeons and physicians as in that of Italy. One of the best of her prime ministers was the 'general practitioner' of Casella in Piedmont, Giovanni Lanza, under whose wise and well-timed policy she transferred her capitol from Florence to Rome, while statesmen of cabinet rank in nearly every administration have been drawn from her men of light and leading in medicine, prominent among whom may be mentioned one of her ablest Ministers of Public Instruction, Dr. Guido Baccelli. Nearly every year she adds to the number of her Senators one or more of her chief professors of the healing art, the latest accession to these 'Patres Conscripti' being Dr. Enrico Bottini, who holds the Chair of Obstetrics at Novara. Professor Bottini was for some time Lecturer in Clinical Medicine at the University of Pavia, where he gave such proof of general as well as special ability that he was elected Deputy to the Italian Chamber. From there he has been raised to the Senate."—*Medical Record*, Dec. 26, 1891.

The Treatment of Thread-Worms by Naphthaline.—Minerbi has used naphthaline in the treatment of thread-worms. Eleven children infected with this parasite were cured by its use in less than eight days. The formula employed was the following:

Naphthaline, 1 gr. to 1.50 gr.
Olive oil, 40 to 60 grs.
For one enema.

In the adult larger doses must be used.

Naphthaline, 5 to 6 grs.
Olive oil, 70 to 80 grs.
For one enema.—*Canadian Lancet.*

Treatment of Earache.—The acute pain accompanying otitis is often relieved by the following mixture:

Chloroform, 1 gr.
Olive oil, 8 grs.

Twenty to 40 drops to be poured into the auditory canal, which is then closed by a little plug of cotton wool.

In cases of pain due to furuncle of the auditory canal, the relief is even more complete and immediate if, for the previous liquid, the following is substituted:

Menthol, 1 gr.
Olive oil, 20 grs.

—*Gazette des Hôpitaux.*

The Route of Respired Air Through the Nose.—R. Kayser, after numerous experiments upon the cadaver and the living subject, asserts that during inspiration in the normal nose, the bulk of air passes along the septum, above the inferior turbinated body, describing a semicircle in its course, and extending upwards nearly to the roof of the nose. Although at variance with commonly accepted opinions, he has demonstrated his work so clearly as to settle the many controversies of reputable authorities regarding this question. According to him, the air enters the nose perpendicularly to the plane of the nares; the continuing aspiratory movement gives it a backward direction, so that the real direction must be the resultant of the two, thereby directing the current through the pars olfactoria, instead of through the pars respiratoria; and settles the mystery regarding the appreciation of smell in quiet breathing. All nasal changes which do not influence the normal direction of the air current need have no restricting effect upon breathing. This will eliminate obstruction in the lower passage for consideration here. Furthermore, this upward direction of air favors the supply of warmth and moisture; the route is made longer and narrower. These attributes serve to filter the air for the lungs. —*Archives of Otology*, Vol. xx, No. 1.

Depilatory Powders.—Dr. Clasen says (*Monatshefte f. Prakt. Dermat.*) that among the best depilatory powders are sulphohydrate of sodium and sulphide of barium. As to the sulphohydrate of sodium, he says that, used as a paste, 1 part to 8 of water, and allowed to remain on for a very short time, it acts well. But it deteriorates very rapidly, and is dangerous to give to a patient, as it is quite capable of producing scars. The sulphide of barium is a safer powder for the purpose. It may be used by mixing 50 parts of it with 25 parts each of starch and oxide of zinc. This is mixed with water, so as to form a soft paste, and spread upon the face. After ten minutes it is scraped off, and leaves a smooth skin.—*Nat. Druggist.*

Fermentation of Bread.—M. L. Boutroux asserts that the fermentation of bread consists essentially in a normal alcoholic fermentation of the sugar which already exists in the flour. The yeast plays a double part in the process—it produces a disengagement of gas which causes the dough to swell, and it prevents the bacteria, which are parasitic on the starch grains, from developing, and thus making the dough sour and dissolving the gluten. M. Boutroux finds in the yeast three distinct microbes, two bacilli and a bacterium, but concludes that they play no direct part in the process of fermentation. If they are of any service at all, it is simply in the production of the fermentable substance; that is, of the sugar.—*Nat. Druggist.*

Civilization and Pain.—Civilized man has of will ceased to torture, but in our process of being civilized we have won, I suspect (says Dr. S. Weir Mitchell), intensified capacity to suffer. The savage does not feel pain as we do; nor, as we examine the descending scale of life, do animals seem to have the acuteness of pain-sense at which we have arrived. *Annals of Hygiene.*

Photographs of the Bacillus La Grippe were presented to the Association Française pour l'Avancement des Sciences by M. Teissier, of Lyons, and mentioned in *Le Progrès Medical* of October 3. This culture and inoculations with it are very peculiar and interesting. It produces all the various symptoms of la grippe, and even pus.

For the relief of nausea and vomiting consequent on etherization, one of the best remedies is chloroform, gtt. iv or v, with gtt. ii or iii of vinegar of opium, given two or three times a day. A hypodermic of morphine, gr. one-sixth, after the operation, controls the nausea, puts the patient to sleep, giving the stomach and nervous system time to recover themselves.—Brinton, in *Times and Register.*

Creasote Against Tuberculosis.—Prof. Dr. Sommerbrodt (Breslau) claims creasote in large doses (15 grs. to 1 drachm daily), to be the best remedy against pulmonary phthisis. He impresses the necessity not to allow the pharmacopœia to interfere with the doses, as smaller doses will have no influence on the progress of the disease. He quotes nine cases of tuberculosis which were treated with and cured by this drug. In six of these cases, no signs of disease of lung were found after one, two, three, four, six or seven months; still, he continues for six months to give 15 grs. daily. Three cases of tuberculosis in an advanced stage showed, after this treatment, such improvement that they consider themselves well.

Sommerbrodt uses capsules, containing each 1½ grs. creasote, combined with cod-liver oil. If the expense is too large, the patient may use Hopmann's mixture (creasote 1 part, tinct. gentian 2 parts), and take of it 20 to 80 drops three times daily. The main value of this drug lies in the fact that the patient is not obliged to seek climatic influences.

Regarding the effect of this drug on the stomach, he found that belching may be caused for the first few weeks, but this soon disappears. He has given to some patients 5,000 to 20,000 creasote capsules, and their appetite remained excellent, this proving that creasote does not hurt the stomach, regardless of Klemper's opinion to the contrary.—*Berliner Klin. Wochenschrift.*

Peroxide of Hydrogen in the Treatment of Puriform Cavities and of Fistula.—Dr. H. Graff, a military surgeon of Christiana, publishes in the *Norsk Magazine* the result of his experience of peroxide of hydrogen in the treatment of abscesses which do not admit of being laid completely open so as to subject them to antiseptic treatment, and of fistulous sinuses offering the same difficulty. The author recommends, in preference to all other antiseptic fluids, irrigation with a 15-volume solution of peroxide of hydrogen, which he employed with the greatest success at the Royal Hospital of Christiana. The great development of gas which takes place in consequence of the decomposition of the peroxide when coming in contact with blood or pus, removes the pus very effectually. The irrigation, followed by proper antiseptic dressing, causes a considerable decrease of the discharge, and healing takes place in a remarkably short time. In the case of cachectic patients, when granulation is slow, Dr. Graff recommends that that the irrigation should be occasionally changed for injections of balsam of Peru and ether. The treatment is especially valuable in cases of indurated wounds with puriform cavities. It is, of course, necessary to make due provision for rapid and free drainage, as the development of much gas may otherwise produce serious pressure.

On the Local Treatment of Strangulated Hernia by Ether.—Dr. Finkelstein gave in 1882, from his own practice, sixty-three cases of strangulated hernia. Of these five yielded to taxis. In fifty-eight he employed "local etherization," taxis having failed, and of these fifty-eight cases fifty-four proved successful. Of the four unsuccessful cases two underwent surgical operations and two died refusing operative treatment. The method is simplicity itself. The patient is placed on his back, with the hips slightly raised and legs flexed, and then every ten minutes or a quarter of an hour a tablespoonful of sulphuric ether is poured on the hernia ring and tumor. The application of ether is carried on for, as a rule, from three quarters to three hours (or even four hours) until the tense tumor relaxes and lessens a little. As soon as this occurs, and if the strangulated bowel does not reduce itself, several slight efforts are made to reduce it, and almost "always" it slips with a gurgle and amazing ease into the belly cavity. If the omentum alone be strangulated, the ether method is absolutely useless. As the ether method causes an after feeling of heat and burning on the penis, labia, etc., Dr. Koch (America) protects these and other sensitive parts by previously smearing them with olive oil, and, in addition, covering them with pledgets of cotton wadding. The ether seems to act thus. Richter, Velpeau, and others, hold that strangulation may in some cases be caused by spasm of the abdominal orifice. In these cases the ether may act by relaxing the spasm and thus reducing the bowel movable. That may be so, our author remarks, but he himself lays most stress on the property ether has of producing intense cold by rapid evaporation. The intense cold condenses the gas in the bowel, and by so doing diminishes its calibre. Possibly, also, the cold stimulates the peripheric nerves in the bowel sheath, and excites it to natural peristaltic action, which is more likely to empty it of gas, fluid, and semi-fluid contents than the rude manipulations in taxis. —*Medical and Surgical Reporter.*

The Extraction of a Hairpin from a Woman's Bladder. —In the *Gazzetta degli ospitali* for November 15th Dr. Caldani describes an ingenious procedure that he has resorted to for this purpose. He made a small hook of iron wire, and, passing it into the bladder through a canula, seized the hair-pin with it, and then drew the hook slowly out through the canula by means of a so-called mechanical corkscrew. The hair-pin was, of course, so changed from its original shape, being newly doubled by the traction, as to pass through without injury to the bladder. He remarks that the materials for improvising such an apparatus are to be found in almost any house.—*N. Y. Med. Jour.*

The Operation for Cleft Palate in Two Sittings.—In a note read at one of the summer meetings of the *Société de médecine de Paris*, published in the *Union médicale* for Nov. 21st, M. Polaillon recommends this procedure as being less fatiguing to both patient and operator. At the first sitting he traces the lateral incisions, frees the mucous membrane, scrape the bone, and checks any hæmorrhage there may be by compression, sometimes with a hæmostatic forceps. On the next day or the day after he refreshes the flaps, which are now somewhat swollen and tend to approach the median line, and then inserts the sutures, with the great advantage that the hæmorrhage is trifling. He thinks this method insures success even in the most difficult cases.—*N. Y. Med. Jour.*

DOMESTIC CORRESPONDENCE.

Diphtheria.

To the Editor:—In reference to your editorial remarks on diphtheria, in The Journal of December 19, 1891, we desire to say a few words.

Of diphtheria you say: "Now that it has been settled beyond all cavil that the *false membrane* (italics mine) is the place of formation of the poisons which produce all the symptoms of this disease, it is clear that the time for interference is at the beginning of the trouble, and not after great extension of the membrane has made its destruction almost impossible. Therefore the time for diagnosis is early, and the first appearance of a false membrane in the throat, no matter how slight, no matter how mild, is the time to say 'diphtheria,' and to act accordingly."

Now this cautious policy is all very good, as far as it goes —and it goes a long way—but it does not cover the case, and is liable to mislead, in a very important respect.

For the *first* palpable manifestation of diphtheria is *not*, in near all cases (especially in *severe* epidemics), an appearance of *false membrane* in any visible locality.

For it is well known, that cases like the following occur in practice: A more or less severe epidemic of diphtheria is prevailing; a hurried night call brings the doctor to the bedside of a baby, who is just over a convulsion (was thought to be well yesterday); maybe the patient, if old enough, is found playing with toys when the doctor arrives, or if long enough over the fit, is asleep. Now listen to that sleep. Hark! hear ye that suspicious rattling—the flapping of the *paralyzed* uvula—more ominous than the startling tail-music of the crotalus horridus, for 'tis the death-knell of a precious life. Fine moist, crepitant râles are usually to be heard over the lower dorsal thorax. Little or no fever. The *sage femmes* say "Oh, 'tis only a *worm* fit—nothing more." Nothing abnormal can be discovered in or about the *throat*, save the results of paralysis. The patient may be—sometimes is—*apparently* a little better next morning. The doctor carefully examines the throat again, in good daylight; no *false membrane* to be seen anywhere, or any abnormal *appearance* about the throat, inside or out. Such cases may progress more or less rapidly; in some, there is a comparatively brief lull in the storm, just after the first convulsion, but usually only for a few hours. These baby cases, if as much as a year or two old, may live four to six days, and if so, the disease may creep up, so to speak, and the false membrane spread over the throat, and probably the naso-pharyngeal space, and the patient soon dies, usually in great distress. But if these baby patients are only a few months old, they usually die within forty-eight hours from the time of the first convulsion; and in many such cases, death occurs before any false membrane is visible anywhere.

And were it not for the characteristic paralysis—and the prevailing epidemical influence—the diagnosis might be, pulmonary œdema and nervous exhaustion; for it is well known, that rapid exhaustion, from *any* cause, strongly tends to produce convulsions. All the cases of diphtheria that *begin* with *paralysis* or *convulsions*, die, inevitably, do what we will. And we have met with another type of diphtheria, in which the appearance of *false membrane* is *not* the initial, or even an early, manifestation. This type of cases are usually 4 to 8 years of age. They often begin by complaining of weakness of the legs; knees get so weak patient cannot walk. Solid food may be masticated, but patient cannot swallow it, owing to paralysis of the muscles of deglutition. Usually no fever; pulse weak and slow, surface pale; temperature subnormal in some cases. Within twelve to twenty-four hours, many such patients have *convulsions*, which may recur more or less frequently, until death closes the painful scene—for this class of patients also, all inevitably die; though some of this latter class live long enough for the characteristic false membrane to form in the throat and contiguously.

Trousseau tells us—and we have often verified the fact—that a high degree of *albuminuria* is a prominent accompaniment of all these paralytic and convulsive forms of diphtheria. But a knowledge of this important pathological fact has not enabled us (in this class of cases) to make our *curative* efforts more effective; although we strongly believe that such knowledge could be utilized to valuable purpose, in devising prophylactic means and measures.

But we do not for a moment presume that we have told of anything *new*, by briefly referring to the types of diphtheria we have mentioned; for such knowledge has long been common property.

Trousseau, who has given us the best description of the various forms of diphtheria, specially describes the paralytic and convulsive forms of this direful disease, and tells us that "the manifestations of diphtheria are extremely variable; and when it *begins* in *severe paralytic* or *convulsive* form, is *fatal*."

Q. C. SMITH, M.D.

Austin, Tex., December, 1891.

"The Methods of Medical Instruction" and the Pan American Medical Congress.

To the Editor: The thoughtful editorial in the JOURNAL for to-day (January 16) is full of suggestions. The time has come when the *art* of *medical teaching* must be taught. It is folly to suppose that because a man is a physician he is, by that token, a competent medical teacher, too. There is a vast difference between a *practitioner* and a *teacher*, at least in the abstract. The qualities are frequently combined, but we all know brilliant practitioners who would be laughing stocks before medical classes, and many of us know successful teachers who would be but bulls in china shops were they to invade the sick chamber. But whoever may choose to become a teacher of medicine, let him first learn how to teach—let him study some *method of conveying instruction*. How many Deans of medical colleges are there who have any comprehension whatever of the *technique of teaching* in such departments as histology, bacteriology, pathology, physiological chemistry? And what man, destitute of such knowledge is fit to execute the duties of executive officer of a Faculty? How can he know when members of his Faculty are properly discharging their duty?

The idea seems to have been grasped by the National Committee on Organization of the Pan American Medical Congress, one of the twenty-one sections of which, as announced, being devoted to "Medical Pedagogies." The title is felicitous and, of itself, is notice to platitudinous addle-pates that the old fashioned dissertation on "higher medical education" may be left on the dust covered shelf. The object is, evidently, not to air Utopian dreams, but to show how knowledge is imparted. It promises to be a grand event. Deans of colleges ought to be there in numbers and so ought all men engaged in the responsible task of teaching medicine in any of its departments. The bacteriologist, the pathologist, the histologist, the chemist, will each show the best features of his particular method of teaching; the oculist, the laryngologist, the gynecologist will each show how *he* teaches his students, demonstratively, if not clinically; even the strictly didactic teacher—the old fashioned preacher of medicine—will no doubt be accorded a hearing. Dr. Roosa, the chairman of the Section, will without doubt run a model medical college in Washington for four days in September, 1893. The event will be a milestone in the march of progress.

REFORMER.

BOOK REVIEWS.

INCIDENTS IN THE LIFE OF A PHYSICIAN. By JOHN SINGLETON, M.D. *Hutchinson, Little Collins Street, Melbourne, Australia.* 1891.

This is the composition of a philanthropic worker at the age of eighty-three years. For fully sixty years, Dr. Singleton has devoted much time in visiting jails and in the rescue of criminals; forty years of which time he had spent in Victoria. The book is made up of the most striking instances of attempted relief or rescue, jotted down at leisure moments.

BULLETIN OF THE HARVARD MEDICAL SCHOOL ASSOCIATION. Number 1. Boston: G. H. Ellis. 1891.

This pamphlet of fifty pages marks the somewhat tardy organization of an alumni association, at the Athens of our Eastern slope, of the oldest American university's medical department. The President, Dr. J. R. Chadwick, delivered the principal address at the first banquet, in which he points out the advantages ensuing from university affiliations to professional education. He concluded his remarks by offering the sentiment from the Talmud, which calls to mind the first aphorism of Hippocrates, "The time is short, the work is great, the reward is also great, and the master presses: it is not incumbent upon thee to complete the work, but thou must not therefore cease from it." Dr. Oliver Wendell Holmes sent a letter of regrets, which is printed. In it he speaks of himself quaintly, as being the sole survivor of that primeval Faculty of medicine which he entered in 1847. He says: "I know that the members regard me as a relic of the past, not without a certain value as a fragment of antiquity. In that point of view, I am not merely a rarity, I am a unique specimen, and have an adventitious market price, *like one of those rare cents* for which collectors pay a premium. Half-worn-out old copper as it is, its scarcity makes it worth a dime, or perhaps a dollar." Dr. Holmes then sketches the Faculty of seven of 1847, the men by whose side he worked when the classes were small and the accommodations meager, as compared with the grander status of the present day. Dr. Holmes is intensely loyal to the Healing Art, and he is proud of his past connection with the Harvard School; he refuses no legitimate opportunity to draw his pen in behalf of either of them.

THE sun never sets on the soil of the United States. When it is 6 o'clock at Attoo Island, Alaska, it is 9:36 o'clock A.M. the next day on the eastern coast of Maine.

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SATURDAY, JANUARY 23, 1892.

A SECRETARY OF PUBLIC HEALTH.

With the marvelous growth of our country, there has taken place a corresponding change in many of the conditions and functions of our methods of government.

The growth of sanitary science, and a knowledge of hygienic conditions, as practically understood by the medical profession and the people, dates almost wholly within the latter half of the present century. Within that period there has been a continuous immigration of not only thousands, but of actual millions, of people, from the countries of Europe to our land.

Unfortunately, of late years, this overflow is not made up of the average of the citizens of Europe, but is largely composed of defective, immoral and ignorant people.

The ability of the population of this country to absorb and assimilate, reform and educate the masses who seek new homes with us, is one of the wonders of our wonder-land.

To absorb, assimilate and educate those who come to us with healthy minds and healthy bodies, adds to the strength of our body politic; but to take in those who are insane, criminal and physically diseased, is to invite outbreaks of National indigestion, a knuckling and knotting of our inwards that will surely produce convulsions and dire distress.

To obviate so threatening a condition of affairs, the time has come when intelligent supervision of immigration must be exercised by the very head of our Government. In order to accomplish so desirable a purpose as this, it is undoubtedly necessary that the President should have the added strength of a Secretary of Public Health as a member of his Cabinet.

This office is as essential as that of the Attorney-General or Secretary of Agriculture. It is just as necessary to protect the Nation from an invasion of diseased and immoral people as from a foe that is armed with rifled cannon and dynamite guns.

We have seen how rapidly our land recovers from the devastation of a protracted war. While a vaccination of leprosy, yellow fever or anarchy would, in the course of years, be infinitely more disastrous in its eventual results.

The prosperous condition of our Nation makes us nearly shut our eyes to this threatening peril. Congress is appealed to for the enactment of a law creating a Secretary of Public Health. We hope that every physician who receives this JOURNAL will take one hour in which to write to his Congressional Representative and Senator, and ask their favorable and active support of this measure. Direct their attention to the filling of American hospitals, infirmaries, insane asylums, and other public and charity institutions, with recent immigrants, and to the fact that from these people spread disease and death.

Tell them that a Cabinet officer of Public Health would exercise a great power in the control of immigrant-carrying vessels. That such an officer would be able to formulate laws and regulations which would prove of the utmost value. Direct their attention to the rapid growth of associate charity organizations in all our large cities and centers of population, whose chief function is to provide for these very immigrants. Tell them of the addition to the tax duplicates in every city because of the immoral, diseased, and defective classes of Europe that more than half fill our jails, workhouses, infirmaries, and asylums. Tell your Congressman and Senator this, and tell it to them so strongly that they will not forget it. If you can't do this in one hour, take two or even three, and the time will be well spent.

If our language seems strong, just think for a few moments of the gratuitous medical professional work done every month, week, and year for these people.

A Cabinet officer of Public Health would be a boon as affording very great relief to physicians as a body of professional men, and also to philanthropists and tax-payers. This is a case of protection, pure and simple.

THE METHOD OF ZADIG IN MEDICINE.

In one of his inimitable addresses, recently given, T. LAUDER BRUNTON took up the story of Zadig and applied it to medicine. The story of Zadig as briefly told by BRUNTON is this:

> Zadig was a young man who, disgusted with life, retired from Babylon to a lonely place on the banks of the Euphrates, and there studied animals and plants until he saw a thousand differences where others could see only uniformity. One day one of the queen's eunuchs, followed by a band of officials, came hastening past, and asked Zadig, "Have you seen the queen's dog?" Zadig modestly answered, "A bitch, I think, not a dog." "Quite right," said the eunuch, and Zadig continued, "A very small spaniel, has lately had puppies, limps with the left fore foot, and has very long ears." "You have seen her, then," said the eunuch. "No," said Zadig, "I have never seen her and did not even know

c. The decomposition of the electrolyte corresponds to the decomposition of the animal electrolyte (blood, lymph and other fluids).

d. Oxygen and hydrogen are referred to above, not as the only reaction agents, but also as the types of their congeners, engaged in the complex chemical exchanges of living organisms.

2. During functional rest of a given living animal area, the anabolic, constructive action or storage of energy goes on and during functional activity the katabolic, destructive action or releasing of energy goes on, and this is evidenced by their opposite polarities, positivity (in the *internal circuit*) being the sign of functional activity, and negativity, in the same circuit, the sign of functional rest.

3. What was a negative (anabolic) focus, during rest, becomes *a positive focus (katabolic) during activity.*

4. In addition to the storage material synthetized by the animal itself, and furnishing, during functional activity, an electro-positive plate, the principal electro-positive fuel or oxidizable tissue is furnished by the food assimilated by the animal, which *food is the result of the anabolic, storage* or constructive faculty of the plant.

5. The origin and initiation of an electric current, and consequent polarity, *cannot be from the electro-negative plate* of a voltaic cell, but the current arises from the initial chemical action at the electro-positive plate, and therefore the starting point of living chemical exchanges is *in the electro-positive plate*—that is to say, is katabolic, oxidizing or destructive. Since an electric current is actual or released energy, it cannot arise at the negative plate, where energy is stored or rendered potential. The same is true of all the liberated energies.

As a consequence, all metabolism, all chemical exchanges in living animal organisms, are initially electro-positive, and if an anabolic, constructive or electro-negative focus is found by tests, it is not primary, but accidental, and the result of the action of a conductively associated katabolic or oxidizing positive plate.

6. It follows that morbid metabolism, constructive or destructive, is primarily electro-positive.

7. This invariable focal positivity provides an accurate guide to medical treatment by electricity. The morbid tissue focus may be regarded in the same light as an artificial voltaic couple.

8. Morbid metabolism may be divided into

a. Excessive chemical exchanges.

b. Deficient chemical exchanges.

In over-activity of the chemical exchanges.

a. An applied positive pole will increase the activity; *i. e.*, augment the disease.

b. An applied negative pole will diminish the activity; *i. e.*, palliate or cure.

In under-activity.

a. An applied positive pole will increase the activity; *i. e.*, palliate or cure.

b. An applied negative pole will diminish the activity; *i. e.*, augment the disease.

Two directions only are open for curative treatment. In over-activity, the negative pole palliates or cures. In under-activity, the positive pole palliates or cures.

9. If an electro-negative focus, here held to be secondary and incidental, is thought to be most desirable to be treated, the polarities indicated must be reversed.

This theory means to say that vital processes are electrolytic and electrosynthetic, plus a directive tendency which is a mystery. It does not mean to say that "electricity is life," but it means to say that the processes of living proceed according to electric laws, releasing by the electro-chemical action of oxidation, combustion or katabolism, heat, mechanical, electric and other energies, with the production of the waste products of excretion, urea, uric acid, creatinine, *etc.*, and *storing* or rendering potential the same energies by the electro-chemical action of anabolism, with the production of formed chemical products essential, in the case *of the animal, to its specialized* existence (ferments, fats, glycogen, etc.).

It claims as a speculative postulate, that the fundamental starting point of both release and storage of energy, of the destruction and the construction of products, of katabolism and anabolism; of, in short, metabolism, is situated at protoplasmic foci consisting of protoplasm oxidized (or similarly attacked), and the oxidizing or attacking electrolyte, of protoplasmic voltaic couples—that the protoplasmic area attacked is therefore *electro-positive*, and that, as a consequence *of this initial action at the electro-positive* area or element, a secondary constructive, storing and anabolic chemical *reaction is accomplished* at a protoplasmic electro-negative area or element—in short, that anabolism is secondary to and dependent upon the initial katabolism.

It means to say that the animal continually dies that it may live—that its constructive metamorphosis is initially dependent upon its destructive and more concisely, as regards *the constructive, that it is due to the chemical* union of substances set free at the positive element by oxidation and allied actions, and uniting with other substances at the *negative plate, antecedently oxidized or not*—that, in short, katabolism and anabolism are interallied in an electro-chemical cycle composed of protoplasmic voltaic couples, where *katabolism initiates that movement* which results both in waste products and formed products, and which, when it ceases, is death of the part or of the whole.

It *is this katabolic beginning, signalled* by the focal positivity, that we may hope to influence by an applied external energy, and thus influence those life processes which underlie it. And *since this initial katabolic* centre is the source of heat, mechanical force, electric energy, and of all the other phenomena of life, normal as well as morbid, we are in a position to suggest, that this electric index of demonstrable and invariable electro-positive polarity is a guide which may enable the physician to thread the labyrinth of health and disease, and to apply a counter or an aiding energy in such a manner as to affect the normal or morbid phenomena, by affecting their initial and underlying chemico-biological processes. As regards electric energy, it is believed this may be accomplished in the manner outlined.

Dr. Von Raitz: I have nothing to add to what Dr. Morton has spoken. There is not a point that can be touched; everything is true, everything is perfectly explained. This is a very important paper, and I am glad to call *attention* to it. If everybody will follow this, he will see what he wants and understand it perfectly, and it will show him where he should apply one pole or the other and have success, and the application of the negative and positive pole has led to very great confusion among electro-therapeutists.

Dr. Goelet: It is a little too much to expect a
gist to discuss a paper by a neurologist, and
New York neurologist, as they do no ink
thing about it; but Dr. Morton is a
and his presence shows that we do k
tricity. I move a vote of thanks f
per. I think he has opened a gran
many of us will find of value. It
are struggling for—the proper appl
we stop to reason and think what we
we would hesitate to do what we do

(The vote of thanks unanimously

Dr. Hayd: I must say, if Dr. Mort
I was to get here to listen to his pap
interest I took in it.

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within forty-eight hours from the time of the first convulsion; and in many such cases, death occurs before any false membrane is visible anywhere.

And were it not for the characteristic paralysis—and the prevailing epidemical influence—the diagnosis might be, pulmonary œdema and nervous exhaustion; for it is well known, that rapid exhaustion, from *any* cause, strongly tends to produce convulsions. All the cases of diphtheria that *begin* with *paralysis* or *convulsions*, die, inevitably, do what we will. And we have met with another type of diphtheria, in which the appearance of *false membrane* is *not* the initial, or even an early, manifestation. This type of cases are usually 4 to 8 years of age. They often begin by complaining of weakness of the legs; knees get so weak patient cannot walk. Solid food may be masticated, but patient cannot swallow it, owing to paralysis of the muscles of deglutition. Usually no fever; pulse weak and slow, surface pale; temperature subnormal in some cases. Within twelve to twenty-four hours, many such patients have *convulsions*, which may recur more or less frequently, until death closes the painful scene—for this class of patients also, all inevitably die; though some of this latter class live long enough for the characteristic false membrane to form in the throat and contiguously.

Trousseau tells us—and we have often verified the fact—that a high degree of *albuminuria* is a prominent accompaniment of all these paralytic and convulsive forms of diphtheria. But a knowledge of this important pathological fact has not enabled us (in this class of cases) to make our *curative* efforts more effective; although we strongly believe that such knowledge could be utilized to valuable purpose, in devising prophylactic means and measures.

But we do not for a moment presume that we have told of anything *new*, by briefly referring to the types of diphtheria we have mentioned; for such knowledge has long been common property.

Trousseau, who has given us the best description of the various forms of diphtheria, specially describes the paralytic and convulsive forms of this direful disease, and tells us that "the manifestations of diphtheria are extremely variable; and when it *begins* in *severe paralytic* or *convulsive* form, is *fatal*." Q. C. SMITH, M.D.

Austin, Tex., December, 1891.

"The Methods of Medical Instruction" and the Pan American Medical Congress.

To the Editor: The thoughtful editorial in the JOURNAL for to-day (January 16) is full of suggestions. The time has come when the *art* of *medical teaching* must be taught. It is folly to suppose that because a man is a physician he is, by that token, a competent medical teacher, too. There is a vast difference between a *practitioner* and a *teacher*, at least in the abstract. The qualities are frequently combined, but we all know brilliant practitioners who would be laughing stocks before medical classes, and many of us know successful teachers who would be but bulls in china shops were they to invade the sick chamber. But whoever may choose to become a teacher of medicine, let him first learn how to teach—let him study some *method of conveying instruction*. How many Deans of medical colleges are there who have any comprehension whatever of the *technique of teaching* in such departments as histology, bacteriology, pathology, physiological chemistry? And what man, destitute of such knowledge is fit to execute the duties of executive officer of a Faculty? How can he know when members of his Faculty are properly discharging their duty?

The idea seems to have been grasped by the National Committee on Organization of the Pan American Medical Congress, one of the twenty-one sections of which, as announced, being devoted to "Medical Pedagogies." The title is felicitous and, of itself, is notice to platitudinous addle-pates that the old fashioned dissertation on "higher medical education" may be left on the dust covered shelf. The object is, evidently, not to air Utopian dreams, but to show how knowledge is imparted. It promises to be a grand event. Deans of colleges ought to be there in numbers and so ought all men engaged in the responsible task of teaching medicine in any of its departments. The bacteriologist, the pathologist, the histologist, the chemist, will each show the best features of his particular method of teaching; the oculist, the laryngologist, the gynecologist will each show how *he* teaches his students, demonstratively, if not clinically; even the strictly didactic teacher—the old fashioned preacher of medicine—will no doubt be accorded a hearing. Dr. Roosa, the chairman of the Section, will without doubt run a model medical college in Washington for four days in September, 1893. The event will be a milestone in the march of progress.

REFORMER.

BOOK REVIEWS.

INCIDENTS IN THE LIFE OF A PHYSICIAN. By JOHN SINGLETON, M.D. Hutchinson, Little Collins Street, Melbourne, Australia. 1891.

This is the composition of a philanthropic worker at the age of eighty-three years. For fully sixty years, Dr. Singleton has devoted much time in visiting jails and in the rescue of criminals; forty years of which time he had spent in Victoria. The book is made up of the most striking instances of attempted relief or rescue, jotted down at leisure *moments*.

BULLETIN OF THE HARVARD MEDICAL SCHOOL ASSOCIATION. Number 1. Boston: G. H. Ellis. 1891.

This pamphlet of fifty pages marks the somewhat tardy organization of an alumni association, at the Athens of our Eastern slope, of the oldest American university's medical department. The President, Dr. J. R. Chadwick, delivered the principal address at the first banquet, in which he points out the advantages ensuing from university affiliations to professional education. He concluded his remarks by offering the sentiment from the Talmud, which calls to mind the first aphorism of Hippocrates, "The time is short, the work is great, the reward is also great, and the master presses: it is not incumbent upon thee to complete the work, but thou must not therefore cease from it." Dr. Oliver Wendell Holmes sent a letter of regrets, which is printed. In it he speaks of himself quaintly, as being the sole survivor of that primeval Faculty of medicine which he entered in 1847. He says: "I know that the members regard me as a relic of the past, not without a certain value as a fragment of antiquity. In that point of view, I am not merely a rarity, I am a unique specimen, and have an adventitious market price, *like one of those rare cents* for which collectors pay a premium. Half-worn-out old copper as it is, its scarcity makes it worth a dime, or perhaps a dollar." Dr. Holmes then sketches the Faculty of seven of 1847, the men by whose side he worked when the classes were small and the accommodations meager, as compared with the grander status of the present day. Dr. Holmes is intensely loyal to the Healing Art, and he is proud of his past connection with the Harvard School; he refuses no legitimate opportunity to draw his pen in behalf of either of them.

THE sun never sets on the soil of the United States. When it is 6 o'clock at Attoo Island, Alaska, it is 9:36 o'clock A.M. the next day on the eastern coast of Maine.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own *Society*, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, JANUARY 23, 1892.

A SECRETARY OF PUBLIC HEALTH.

With the marvelous growth of our country, there has taken place a corresponding change in many of he conditions and functions of our methods of government.

The growth of sanitary science, and a knowledge of hygienic conditions, as practically understood by the medical profession and the people, dates almost wholly within the latter half of the present century. Within that period there has been a continuous immigraion of not only thousands, but of actual millions, of people, from the countries of Europe to our land.

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that the queen had a dog at all." At the same time the finest horse in the king's stables ran away, and the chief huntsman, in seeking it, also made inquiries of Zadig, who said, "A first-rate galloper, five feet high, small hoofed, tail three feet and a half long; cheek-pieces of the bit are of twenty-three carat gold, and the shoes silver." "Where is he?" cried the chief huntsman. "I have not seen him, and never heard of him before," said Zadig. Naturally enough he was suspected of having stolen both the spaniel and the horse, was tried and condemned; but no sooner was sentence pronounced than both the missing animals were found. Zadig was then asked to explain how he knew so much about them without having seen them, and *this he said was the way: He noticed one day* in the sand the tracks of an animal which he easily recognized as those of a small dog. Long faint streaks on the ridges of sand between the footprints indicated that it was a bitch with pendent dugs, showing that she had had puppies shortly before. Other marks on the surface of the sand close to the prints of the fore feet indicated that she had very long ears, and one of the footprints being fainter than the others showed that she was slightly lame. As for the horse, the marks of his hoofs were all equidistant, showing that he was a famous galloper. In a narrow alley the dust on the trunks of the trees was disturbed at three feet and a half from the middle of the path; this showed the length of his tail, which had swept the trees as he lashed it from side to side. Branches of the trees met overhead at a height of five feet, and under them were some newly-fallen leaves, showing that the horse had brushed against them, and was therefore five feet high. As to his bit, he had rubbed it against a stone which Zadig recognized as a touchstone, and his shoes had left such marks upon pebbles of another kind as showed that they were made of fine silver.

Teaching by fable has long been a favorite means of emphasizing a particular thought, principle or procedure, but, like the proverb, the fable is at once too sweeping and too incomplete. It seems, therefore, rather paradoxical to use the fable to illustrate completeness, and the fable of Zadig is not without the fault of shallowness.

As the observation of the most minute differences must always precede classification, so must a complete analysis precede a philosophical conception of relations.

The method of Zadig is singularly complete in its observations of details, many apparently insignificant. It is remarkable in the genius which permitted a grouping of apparently dissociated factors, and the elaboration upon them of a theory consistent with them all. But it is very difficient in its completeness because of its unwarranted accuracy. It was certainly bold and illogical to assert that all the phenomena connected with the horse had been produced by that animal. But how often do we find this same mental process followed in medicine; *post hoc* is too often recognized as *proptu hoc*.

A patient is presented to a class and told to extend his right arm. The wrist drops, and the class diagnosticates lead poisoning. He then extends the left arm, and with it the left hand. The theory of lead poisoning is at once dropped. Zadig's thoroughness was not followed.

An old man is brought into a hospital in a state of coma; no history accompanies him; he is examined; his heart and lungs are found to be normal; his temperature is normal; his pupils react normally. There is no alcohol upon his breath; no evidence of a narcotic poison can be found. One arm is less flexible than the other. His urine, obtained through the catheter, is found to be heavily albuminous. The diagnosis of uremic coma is made, and treatment instituted accordingly. At the autopsy next day large white kidneys are found, which clearly explain the albuminuria; but an extensive hæmorrhage in the brain is also found. The case occurred in the practice of the writer. The method of Zadig was not followed. The insignificant stiffness of the arm found no place in the diagnosis, and sufficient account was not taken of the patient's age.

An infant, after a severe and exhausting diarrhœa, was greatly emaciated, and had a very marked enlargement of the mesenteric glands. During convalescence fever again appeared, and serious brain symptoms. These symptoms were: sluggish pupils, irregularity of the pulse, irregularity of respiration, finally reaching a typical Cheyne-Stokes character—considerable drowsiness, hydrocephalic cry, and vomiting. In view of the preceding conditions, and of the condition of the abdominal glands, a diagnosis of tubercular meningitis was made. After a week's time improvement set in, and ultimately complete recovery ensued. This case well illustrates the deficiencies of the Zadig method. All visible conditions had been taken into account, and a logical conclusion made. But there was failure to recognize the unseen influence of the prevailing influenza.

Diagnosis in medicine should aim at as great accuracy as possible, but the inherent deficiencies of the methods should be remembered. Most frequently diagnoses of generic rather than a specific type should be made. And as a rule such diagnoses are quite sufficient to guide a rational treatment.

The exact methods of the laboratory and of physical diagnosis often lead to very definite conclusions which are only partially correct or even sometimes entirely wrong. There are no pathognomonic signs or symptoms in disease, and because of this, routine methods can never supply the place of good judgment.

Between the scientific investigation of disease for the advancement of knowledge and the establishment of principles on the one hand, and the actual management of sick people on the other, a vast difference exists. The scientist can only deal with that which is positively established. The practitioner must deal with much which is not established. An attempt to be scientifically accurate in all diagnoses requires that much matter which is practically useful, but highly unscientific because not proven, should be ignored. The man who limits himself to strictly scientific methods, can be but a mediocre practitioner in the present state of medical knowledge. On the other hand the man who ignores the known scientific methods, limits his usefulness by the incompleteness of his diagnosis, and the consequent routine nature of his practice.

Not infrequently very brilliant specific diagnoses are made upon data sufficient only for a generic diagnosis; subsequent events confirm these diagnoses. They should always be regarded as excellent guesses, guided indeed by good judgment, but they are not evidence of superior knowledge.

The "old woman" will make a positive diagnosis, perhaps correct, where the well-informed physician would hesitate to give his opinion.

We once saw an example of a brilliant diagnosis which proved to be correct, but might not have been. A child was brought into a dispensary with the ends of all its fingers swollen from some recent injury. The clinician, without permitting the mother to make a statement, placed the child's hands on the edge of a table, and showed that the inner edges of all the swellings made a straight line. He then asserted that the injury had been caused by a window sash falling upon the fingers. His guess was correct.

The method of Zadig should be imitated so far as it teaches accuracy of observation of the minutest detail. Its tendency to conclusions more accurate than the information obtained will justify, should be avoided.

THE PAN-AMERICAN MEDICAL CONGRESS.

This great movement for the unification of the medical profession of the Western Hemisphere is progressing rapidly. The published list of the International Executive Committee indicates that the organization is being developed in a very systematic manner. That a distinguished medical man—and the list embraces only *prominent names*—should have been selected in the various countries from Behring Sea to the Straits of Magellan and from Labrador to Terra del Fuego, and that nominations for various offices should have been received from a majority of these gentlemen, and that these nominations should have been confirmed and commissions issued and acceptances returned, all since last May, shows not only vigorous administration at this end of the line, but what is of perhaps more importance, hearty coöperation on the part of the profession in the various constituent countries. The correspondence that was laid before the Committee on Organization at St. Louis, last October, indicated enthusiastic appreciation of the movement. Our exchanges from both Canada and Spanish America contain editorials favorable to the Congress.

This movement will command the patriotic support of the entire profession of the United States. It was inaugurated in open session of our representative National Association. The Committee on Nominations, consisting of one for every State and the various branches of the Governmental medical service, appointed a Committee on Permanent Organization, consisting of one for each State, Territory, and the Army, Navy, and Marine Hospital service. This committee met pursuant to public announcement, elected its own officers, and adjourned to meet for purposes of organization at St. Louis last October. At that meeting the appointment of an Auxiliary Committeeman in each local medical society in each State was confirmed. All nominations for officers of the Congress and for place of meeting were on the roll-call of States. In this branch of its work the committee practiced extreme care in seeing that no important section of the country was either ignored or treated unfairly. The result, so far as a result was realized, showed that good men can be found in every part of the United States. The committee further demonstrated its disposition to act fairly by adjourning, that it might complete its work with more deliberation at Detroit next June. There are many officers of both the General Congress and the sections yet to be elected.

This brief résumé of the work as it was shown at St. Louis indicates that this Congress movement is one thoroughly in touch with the rank and file of the profession of the United States. The publication of the promised official bulletins will doubtless show that it sustains similar relations to the profession in other American countries. In both instances we prophecy for the Congress loyal support and zealous coöperation.

Relative Frequency of Dislocations.—At a recent lecture at Rush Medical College, Chicago, Prof. John B. Hamilton gave the following statistics from the annual reports of the U. S. Marine Hospital service from 1874 to 1890, inclusive: Total number of injuries reported, 46,496; total number of dislocations reported, 884. [Prior to 1878, these injuries were not classified in the reports, and the report for 1877 was never published.]

	PART INVOLVED IN 598 CASES.										Miscellaneous and Unclassified.
	Maxilla.	Clavicle.	Shoulder.	Elbow.	Patella.	Wrist.	Hip.	Knee.	Ankle.	Vertebra.	
	6	43	308	70	19	34	30	26	56	6	286
Approximate per cent. to whole number classified	1.+	7.+	51.+	11.+	3.+	5.+	5.+	4.+	9.+	1.+	

Bequests of Medical Men to the Cause of Medical Education.—The Johns Hopkins University library will be enriched by the bequest of the late Dr. Frank Donaldson, of Baltimore, of his collection of laryngological and clinical works, over two thousand volumes in all.

Under the will of the late Dr. Buckminster Brown, of Boston, the University of Harvard will receive two donations. The medical school will be offered the sum of $40,000 for the purposes of founding a chair in orthopædic surgery, which shall bear the name of the donor, and his medical books will be given to the college library.

The late Dr. Lippert, of Berlin, left to the medical faculty of the university of that capitol the sum of $4,500 for the endowment of a prize, to be competed for by advanced students in surgical pathology and hygiene.

In Vienna, the widow of Professor von Bamberger has carried out the wishes of her husband in establishing a fund, valued at $8,500, for the benefit of poor deserving students at the University of Vienna, irrespective of creed or nationality.

The Jacket of Japanese Bamboo.—In the *Se-I-Kwai Medical Journal* for March 28, 1891, appears a report on the use of bamboo, as a substitute for plaster-of-Paris, in the construction of jackets for the treatment of spinal disease, rickets, and the like. The paper was written by Dr. K. Kashimwra, of Tokio. He formed the opinion that the plaster jacket was less suitable for the people of his nation than for some others, principally for the reasons that the Japanese have the habit of taking a body-bath daily, and that the weight of the plaster was not well borne by them. After making trial of various materials, he finally settled down upon bamboo in strips, quilted or woven into the form of a cuirass. Bamboo is plentiful and cheap in Japan, easily shaped or curved when softened by the warmth of a fire, and retaining its shape after it has cooled. He has already employed it in a number of cases and has found it a good substitute for plaster in spinal caries.

The International Executive Committee of the Pan American Medical Congress.—The committee on organization of the Pan American Medical Congress at its meeting at St. Louis last October, elected the following International Executive Committee: The Argentine Republic, Dr. Pedro Lagleyze, Beunos Ayres; Bolivia, Dr. Emelio Di Tomassi, LaPaz; Brazil, Dr. Carlos Costa, Rio de Janeiro; British North America, Dr. James F. W. Ross, Toronto; British West Indies, Dr. James A. De Wolf, Port of Spain; Chili, Dr. Moises Amaral, Santiago; United States of Colombia, Dr. P. M. Ibañez, Bogota; Costa Rica, Dr. Daniel Nuñez, San Jose; Ecuador, Dr. Ricardo Cucalon, Guayquil; Guatamala, Dr. José Monteris, Guatamala Nueon; Hayti, Dr. D. Lamothe, Port au Prince; Spanish Honduras, Dr. George Bernhardt, Fegucigalpo; Mexico, Dr. Fornás Noriega, City of Mexico; Nicaragua, Dr. J. I. Urtecho, Grenada; Peru, Dr. J. Cassamira Ulloa, Lima; Salvador, Dr. David J. Guzman, San Salvador; Spanish West Indies, Dr. Juan Santos Fernandez, Havana; United States, Dr. A. Vander Veer, Albany, N. Y.; Uruguay, Dr. Jacinta De Leon, Montevideo; Venezuela, Dr. Elias Roderiguez, Carracas; Hiwaii, Paraguay, Santo Domingo, the Danish Dutch, and French West Indies are not yet organized. Nominations of local officers have been received from a majority of all the members of the International Executive Committee and a number of the lists have been confirmed by the committee on organization. These will be announced as rapidly as acceptances are received.

Charles A. L. Reed,
Secretary-General.

Cincinnati, January 15, 1892.

Methods or Medical Instruction.—Despite the great advances in American medical education during the last few years, it still remains a painful fact that the methods of teaching in our colleges—even the best of them—are unphilosophical, and the means of instruction lamentably inadequate. This is true as regards teaching both the art and the science of medicine.

A trade can scarcely be mentioned, in which young men are taught their work in so irregular a manner as they are *taught the theory and practice of medicine.*

Apprentices learning to be shoemakers, watchmakers and mechanics, do not spend a large portion of their time observing experienced workmen make shoes, watches or machinery. They do not spend hours each day, listening to good workmen "tell" them how to do certain kinds of work. They commence at the onset to perform the simplest manipulations with simple tools and appliances, and step by step labor, till hand and eye and judgment are educated in all that is required of master workmen.

So it should be with the student of medicine. There should be no unwise disproportion between listening and seeing, and *doing*, as always has been and still exists in our colleges.

Consider, for a moment, what every college should provide in no meager amount for each member of its classes. Practical work in the dissecting room, and in the chemical and in the physiological laboratories, should be greatly increased, and the customary didactic lectures in anatomy, physiology and chemistry greatly diminished.

The student should have great opportunities to secure *practical skill in making incisions and in sewing their edges* together; in chiseling bones; in bandaging and in applying various forms of apparatus; in reducing dislocations and in setting fractures; in ligating arteries; in palpation; in obstetric manipulations; in auscultation and percussion; in the use of the laryngoscope and ophthalmoscope; in the examination of the blood, urine and sputa; in writing prescriptions; *in writing the history of cases, and in examining* the gross appearances of the most important drugs. The student should also enjoy ample clinical instruction in both general surgery and medicine, and in the specialties.

All this practical work and observation leave comparatively little time for the old form of lecture. By this work the student will become as thoroughly skilled in the use of instruments and appliances as the "journeyman" at the end of his apprenticeship, or as the graduate of a good manual training school.

I would emphasize the importance of that much neglected means of mental discipline—the recitation from text-books. This presupposes special study, and tends to fix firmly in the mind of the student facts and principles. The recitation itself tends to improve facility in using technical terms, and serves as an examination as to the student's proficiency and progress.

It is true, a text-book is a lifeless teacher; a mere recitation is as lifeless as the text-book. With adequate practical work, however, the recitation and the preparation for it become most potent factors in advancing the student in the acquisition of knowledge.

The simple problem is, how to secure the greatest good to the greatest number of students, by increasing the amount of individual, practical work, and by substituting, within proper limits, recitations from text-books for the old form of didactic lectures.

To thus place the instruction in our medical schools on the plane of our best manual training schools, requires a large number of recitation rooms, of small and large laboratories, a very great supply of apparatus and materials, and above all, in addition to the usual corps of professors, a large number of instructors, similar in function to "drill masters" in the army. All this entails an expense so large that the tuition of students cannot meet it.

No medical college, as no literary college, academy or seminary, which provides adequate instruction and means of illustration, can be self-supporting.

Perfection in the methods of instruction in our medical colleges is probably impossible. It is well, however, to set high ideals.—(Abstract of remarks, made at the banquet of the Practitioners' Club, December 28, 1891.)—E. L. Holmes, M.D., Chicago.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-Therapeutic Association, held in Philadelphia, September 24, 25, and 26, 1891.

(Continued from page 90.)

Afternoon Session.—September 25, 1891.

President Massey.—In accordance with the resolution passed yesterday, I announce the committee on meters, namely: Drs. Wellington Adams, Hayd and Robinson.

Dr. Von Raitz, New York, read a paper on Peri-and Parametritis, giving a short sketch of the pathology of both affections, and the physiological and chemical actions of the constant current. He laid great stress upon such knowledge, as it does away with the empiric use of electricity and gives the profession a means by which to work scientifically and successfully.

He cited for each disease one case as a means of illustration. In both cases the positive pole was placed alternately over the hypogastrium and sacrum, and the negative in the vagina. But in the case of perimetritis he went in the womb, and finally, as he thought nature intended evacuation of the abscess, which was peculiarly situated in the utero-vesical space, per bladder—in the bladder. He used in the vagina 80 M. gradually and slowly increased from about 20 M.; in the womb he in the same way used 30 M. and in the bladder 20 M.

The sittings were with the negative in the vagina of about one-half hour, in the uterus and bladder of about 15 minutes duration. To prevent cystitis he used Merck's methyline blue 1½ gr. t. d., and felt assured this agent to be absolutely reliable.

Dr. Bigelow:—I do not want to anticipate in any way whatever the contents of the next paper, therefore I shall not go into the consideration of the pathological conditions for use of the constant current. This society has many important things presented to it this session. When I get back to the clinic next Monday I shall ask Dr. Massey whether we shall not apply the theory of Dr. Von Raitz.

I do not believe very much in parametritis. That which comes from septicæmia does exist, but pure cellulitis or parametritis is very, very rare, especially where there is no salpingitis with it. When you have a fluctuation in either fornix or a history of hectic, and where you can make out a circumscribed round swelling, I think you will find there is salpingo-ovaritis. I think perimetritis is quite frequent and the inter-menstrual pains simulate peritonitis.

In parametritis or salpingo-ovaritis our results have been very good. I have distinguished in my polar action as carefully as I should. We have had but two cases—one very bad and the other is doing very well at present.

In Apostoli's clinic I don't believe his results are as good as Dr. Goelet's. In the acute stage Prof. Apostoli uses the faradic current. He uses it as I would not dare to use it, and he uses the galvanic current as I would never use it. In the first place I had not the delicate touch which he has. On the theory propounded by Dr. Morton and that of Dr. Von Raitz, if it is retrograde metamorphosis, and pathological metabolism, there must be this differentiation in the poles of the current, and I believe that his theory is correct, but until it is backed by clinical evidence I must continue to call it a theory, and I shall await with considerable anxiety the reading of Dr. Morton's paper.

Dr. Goelet:—This subject of pelvic deposits which is the purpose of Dr. Von Raitz' paper—para-and peri-metritis—whichever you choose to call it, has been a question of considerable interest to me, and one with which I have had a good deal to do.

As Dr. Bigelow says, Prof. Apostoli's applications were not satisfactory and I did not follow them out. I did not apply them to the interior of the uterus so I made vaginal applications and it was just in these very conditions which led me to suggest or devise the carbon electrode to be covered with clay so that the vagina could be treated with electricity without cauterizing the surface; I mean effective doses, at least 50 milliampères, and I assure you that if this strength of current is used, and more particularly the positive pole three times a week, in a week or less you will have an irritated surface on the vagina with the ordinary electrode. You will have to stop the application with the carbon electrode simply covered with cotton, therefore, I suggest in addition as a protection that the electrode be dipped in the bicarbonate of soda solution, but I find that there is a much better protection from the use of egg albumen. I annoint the poles before introduction with the egg albumen, just dipped in the white of the egg. That facilitates the introduction, and you have a coat outside the cotton covering, and the local action of the pole takes place on the albumen instead of the mucous surface.

With regard to the polar effects and polar indications in these conditions, I have laid it down as a rule for myself to follow to use the positive pole in these sensitive conditions for the relief of pain; I do not mean pain to firm, hard pressure, but where the patient complains of pain in an ordinary examination. I am satisfied that absorption goes on from the positive as well as the negative and that as rapidly as possible.

I think Dr. Von Raitz has made a good point in shifting the poles to prevent setting up an irritation at the place of deposit. Changing the poles tends to prevent this also. But I have another reason for using the positive pole at first in preference to the negative, and that is that it relieves pain. That is one of the important points which we have to look to—it does not matter even if we have to work longer to cure the condition, we must relieve them of pain. An auxiliary to the treatment, I think, is the faradic current after the application of galvanism. It aids not only in making the patient more comfortable, but in promoting absorption, and I find that I am unable to use the negative pole in some sensitive conditions unless I use the positive afterwards, and I have during the last year used the faradic current that way after the galvanic application, and I think I derived great benefit from it.

Dr. Mosher: Up to this time, I think, we have had nothing said about retroversion uteri. As that is one of the troubles in this region in which I first used electricity, and in which I have had some favorable results, I am very glad to say a word at this point about retroversion.

I had, in the beginning of my use of electricity, under my care two or three very troublesome cases with all those nervous symptoms you are all familiar with. I commenced to use the negative galvanic current with the ball electrode covered with cotton, and I found that I was unable to localize it. I could not carry the ball electrode high enough to reach the part of the uterus I wanted to, so one day I devised a covered copper wire, except the flattened or expanded end, curving it so that it went higher, and from that I went on and modified it, keeping the same idea in view, until I reached the electrode I now present you. I have found by its use that I have been able to carry the current to the posterior wall of the uterus high up, and that I do not need to touch the ovary, and by lowering the external end of the stem I could replace the uterus in many instances so that I not only get the vital action of the current upon the muscular fibres, but I believe that we get a very direct action on the muscular fibre of the round ligament, thereby helping to strengthen the forward supports of the uterus. I have in a great many cases seen the thickened wall of the posterior part of the uterus thin out in six weeks, after four or five applications, as if the walls had been partially removed, and I have thus been able to find fibroid tumors which could not be felt at all before the treatment, which, in the course of five or six treatments, have appeared at the surface, and the tissues have dropped away from them until they stood out as nodules upon the surface, and in this case the uterus has been lightened so materially that it ascended to its normal position after the electrical treatment. Electricity in many cases is aided by the use of a pad of cotton.

I have always used the negative pole covered with cotton. I have used a copper electrode, and that until very lately. I found some time ago that after using the cotton with a current of 30 to 50 milliampéres it was slightly colored green by the copper, and this coloring matter I found reaching to the vagina, and I have changed to the solid silver electrode, As I have used this but a few times, I do not know what the effect would be, but I suppose it would be negative, as the negative pole is used. I can recommend this, as I have used it for a long time and it has proved very satisfactory.

Dr. Van Raitz: Parametritis is any lesion in the cellular perimetric tissues, and that which unites the connective serous tissues to the vaginal wall and the broad ligaments that compose the connective in the anterior cul-de-sac between the bladder and the uterus; that is according to Virchow, and perimetritis he includes in that nothing surrounding the adnexæ, and that is why I have not referred to ovaritis or salpingitis, as this is simply an essay endeavoring to elucidate some of the points in the inflammations in the cellular tissues around the womb.

Dr. Morton: I should like to know what is the point Dr. Von Raitz wishes to make. If I understand it, there are certain chemical products at the electrodes formed *in situ* out of the tissues; as I understand it, these chemical products have a special effect upon the neighboring tissues out of which they are formed; that is, if the products are formed out of the inflammatory product they may have a beneficial or a bad effect upon those products. I think that this is a study in the right direction. I am very glad to see any one come forward and analyze the character of the current he is using, and I was very much interested in the chemical analysis in the products which may be made out of the tissues themselves. It is extremely interesting to know that we make nitric acid, chlorine, hydrogen, oxygen, etc., out of the tissues, and I hope in the future we will be more careful to distinguish the chemical products we are dealing with when we deal with them.

Dr. Nunn: I would like to mention in connection with the paper, as far as the chemical products are concerned, that there is a little thing in applying currents to the skin that may be old to others, but not to me. If you wet a piece of chamois skin and place it upon the skin, and upon this use your electrode, you will have the passage of electricity through it and not burn the skin, and this is particularly true of strong faradic currents. The action of the alkali and the acids is very well taken, and I can corroborate everything which has been said. The action of absorption of these remedies themselves is well known and understood as the electrolytic action of tissues; that we have the acids at one pole and the alkalies at the other. In all enlargements and new growths a careful analysis will show a considerable amount of earthy deposit, and the driving of an acid, say sulphuric acid, through these hard cacoplastic growths will soften them; that is, if you soften the deposition with acid it will be driven through, and by driving it through the growth will soften, and the softening of it may lead you to imagine that there is a deposit of matter in it which this enables you to dissolve.

Another point well taken by the doctor is, that judgment must be used. There must be that judgment. If you don't have that you don't have anything.

Electro-massage is not sufficiently attended to. A coarse current—a very coarse current—thrown into a particular part will set in motion the deeper muscles, and you will have an electric massage where you could not possibly get the advantage of ordinary massage. Use the deep, coarse coil electric current interrupted, or it can be done with the faradic battery, or the interrupted galvanic, or with the induced current.

A point comes up as to whether cervical laceration is parametritis, to which it has been attributed a great deal by Dr. Von Raitz. I have no doubt but that cervical laceration is partly a cause. I hesitate, almost, to say what I am going to say, but I will do it. It does not look very well for one to come here and take issue with great men and their specialties, but it has been said before, and years ago I said the same thing and put it in print, and now I repeat it. I do not think that all this sewing up of lacerations is necessary. If taken in time I do think that the prime subject in this paper would be to treat the laceration as a treatment of the para-metritis. What I want to get at is this, that this parametritis, and if you want to, perimetritis, may come from irritating the cervix and it is the irritated cervix we want to get at, and I believe that ordinary cases of laceration can be absolutely cured without an operation and that the parametritis and subsequent inflammatory conditions which come after would be prevented by such a treatment. Parametritis is caused very, very frequently by the cervix.

With Dr. Goelet I hardly agree. It is a dangerous practice where there is an inflammatory condition near the uterus to give intra-uterine treatment.

The action of faradism after galvanism is particularly beneficial not only there, but everywhere else where you have softened by the galvanic current. Very important afterwards is the stimulating effect of the faradic current and great benefit is derived in dispersing products.

Dr. Massey: I shall be able to add but little to the remarks so well made by all the speakers. I desire to say, however, that I do not think it is proper practice, from our present knowledge of the work, to attribute all our results to the acids and alkalies at the poles. It should be remembered that these bodies do not appear except in the immediate neighborhood of the poles in any kind of work, and are therefore incapable of being the curative agent when the disease is on the other side of several layers of tissue. All these products of the action have to traverse the inter-polar space, it is true, and that they do certain work there is unquestionable. But the question arises, what is the difference between the work of the positive and negative poles at a distance of half an inch from the active pole with a strength of 50 milliampéres. I am not sure that there is any difference. I am, however, perfectly willing to learn and to give up the somewhat agnostic position that I take. I must say I have been working largely on a different theory,—on the theory that I was getting galvanic effects. That is, metamorphosis effects, contractile or vascular effects, and in order to avoid the deposit of these active chemical agents on the vaginal mucous membrane I have reversed the currents—that is I have turned on the current from 30 to 75 or 100 milliampéres, negative, and maintained it from one-half to one minute, and then reversed to the positive to the same amount, probably five or six times, and I have had excellent results from that treatment.

In my observations of para-and perimetritic products the loosening of the adhesions was due to the absorption of deposits rather than of adhesions. I am quite sure that it has been followed by very good results.

Among the practical details in the matter I recall the use of soap on my electrode surface. The vaginal electrode I now use largely is simply an electrode made of an arc-light carbon stick covered with rubber tubing. It is easily and cheaply made, is not acted upon to any serious extent by the current and absorbent cotton adheres readily to it. Wrap cotton around the point as with an applicator until you get a ball of proper size and take soap and twist it around upon it until you get it smooth, and it is as good as the metal electrode I formerly used. I use soap externally also, except where the patient complains of the irritation.

Dr. Von Raitz: I will not attempt to answer every question which has been asked because it would carry me too far, and really some of them have been explained in my paper.

As to Dr. Bigelow's remarks that parametritis is so very little seen now. I do not see how that is. Whether shock or traumatism or gonorrhea I do not care, I had already given an explanation of the meaning of peri and parametritis.

As to the differentiation of the poles, I do not know that it has been generally considered in America. If you want to increase the effect at the poles you should clean the surface to which application is to be made and at least neutralize it, and if you desire to increase the effects have a slightly alkaline solution at the negative and an acid at the positive. Sulphuric acid is the best because in the chemistry of the animal body that acid is already found.

As to the caution given by Dr. Goelet in going into the uterus, of course everybody knows that.

I firmly believe that there was pus in the anterior cul-de-sac and I went into the uterus because I could not see how I was getting any effect from my other treatment, and I thought possibly that there was a mucous or submucous abscess. After trying intra-uterine treatment I found that it did not help and the pain increased and then I applied it in the bladder and this was necessary, as nature evidently intended to evacuate it that way and I believe that where nature shows us that she intends to evacuate in a certain direction we should aid her; therefore I went into the bladder and used 20 milliampéres at three sittings and then by the power of osmosis or tension or whatever it is helped to open the cavity, and there it was.

I am very thankful to Dr. Goelet for his suggestion of egg albumen. I never heard of it and I think it is the very best thing. I think soap has too much irritative effect, no matter how little you use, while egg albumen is very good.

The positive pole is sedative and relieves pain, and so I used it, and I put this to the catarrhal surface and afterwards the negative pole.

As to retroversion I did not speak of it before as I did not take it into consideration.

What the gentleman from Savannah has said about chemical action about the poles has been answered in my paper. Concerning massage, if you apply massage alone and not connected with electricity it is a different thing, but it is wrong to apply it with it as far as I can see and as far as others have claimed. Massage should always be applied before electricity.

What we call vital force, which is working three to four days after the electricity is stopped, is something we know nothing about.

As to the cervix and upper part of the vagina: Ulceration as the cause of peri or parametritis is probably correct; I do not enter into it.

As to Dr. Massey, he is very careful in attributing any healing effect to the action of both poles. I did exactly that. I say its therapeutic effect because the action of the positive pole is stimulating to the pyogenic membrane and in stimulating it, of course healing is a consequence. At the negative we have a stimulating effect. The electrolytic fluid as you get the more positive or negative, or *vice versa* there will be a neutral point.

What is the cause of healing? I claim it is osmosis. As electricity is not a fluid but a force; it is like my arm, I want to raise it; it is power going from the positive to the negative causing this change that works at the tissues at the same time and cures by the power of osmosis like ebullition. What more happens than this I don't know and I don't believe ever will be known. But this osmosis lasts from three to four days after treatment and it does good in healing.

Concerning the distance between both poles, I do not think that I have any right to make assertions, but I believe that the longer the distance between the poles the better, I do not think that they should be near—on theoretical grounds at least. Take a basin of rubber, with one side connected with the positive and the other with the negative pole, the current will go through the fluid contained therein, and you will have at the positive pole acid, and at the negative alkali. I know that 3 or 4 inches is too close for the poles. The action at the positive pole will disturb the action at the negative pole, and *vice versa;* there is not sufficient space between them, and this vital force does not have a chance to develop, and for this reason I do not believe in short circuits.

If the currents are used only for a very short time, they produce a stimulation and acceleration of the electrolytic effect, but I do not think that in reversing so often there is much gained.

Dr. W. J. Morton, of New York, read a paper entitled

METABOLIC POLARITY AND ELECTRO-THERAPEUTICS. (Abstract.)

1. The mutual relations of the two elements and the electrolyte of an artificial voltaic cell, are also the mutual relations of protoplasmic parts of living organisms during the process of living.

a. The oxidation of the positive plate of the cell (the zinc), corresponds to the destructive or katabolic chemical exchanges, producing waste products of urea, uric acid, creatinine, etc.

b. The hydrogen or other bases acting at the negative plate, correspond to the constructive or anabolic chemical exchanges.

c. The decomposition of the electrolyte corresponds to the decomposition of the animal electrolyte (blood, lymph and other fluids).

d. Oxygen and hydrogen are referred to above, not as the only reaction agents, but also as the types of their congeners, engaged in the complex chemical exchanges of living organisms.

2. During functional rest of a given living animal area, the anabolic, constructive action or storage of energy goes on and during functional activity the katabolic, destructive action or releasing of energy goes on, and this is evidenced by their opposite polarities, positivity (in the internal circuit) being the sign of functional activity, and negativity, in the same circuit, the sign of functional rest.

3. What was a negative (anabolic) focus, during rest, becomes a positive focus (katabolic) during activity.

4. In addition to the storage material synthetized by the animal itself, and furnishing, during functional activity, an electro-positive plate, the principal electro-positive fuel or oxidizable tissue is furnished by the food assimilated by the animal, which food is the result of the anabolic, storage or constructive faculty of the plant.

5. The origin and initiation of an electric current, and consequent polarity, cannot be from the electro-negative plate of a voltaic cell, but the current arises from the initial chemical action at the electro-positive plate, and therefore the starting point of living chemical exchanges is in the electro-positive plate—that is to say, is katabolic, oxidizing or destructive. Since an electric current is actual or released energy, it cannot arise at the negative plate, where energy is stored or rendered potential. The same is true of all the liberated energies.

As a consequence, all metabolism, all chemical exchanges in living animal organisms, are initially electro-positive, and if an anabolic, constructive or electro-negative focus is found by tests, it is not primary, but accidental, and the result of the action of a conductively associated katabolic or oxidizing positive plate.

6. It follows that morbid metabolism, constructive or destructive, is primarily electro-positive.

7. This invariable focal positivity provides an accurate guide to medical treatment by electricity. The morbid tissue focus may be regarded in the same light as an artificial voltaic couple.

8. Morbid metabolism may be divided into

a. Excessive chemical exchanges.

b. Deficient chemical exchanges.

In over-activity of the chemical exchanges.

a. An applied positive pole will increase the activity; *i. e.*, augment the disease.

b. An applied negative pole will diminish the activity; *i. e.*, palliate or cure.

In under-activity.

a. An applied positive pole will increase the activity; *i. e.*, palliate or cure.

b. An applied negative pole will diminish the activity; *i. e.*, augment the disease.

Two directions only are open for curative treatment. In over-activity, the negative pole palliates or cures. In under-activity, the positive pole palliates or cures.

9. If an electro-negative focus, here held to be secondary and incidental, is thought to be most desirable to be treated, the polarities indicated must be reversed.

This theory means to say that vital processes are electrolytic and electrosynthetic, plus a directive tendency which is a mystery. It does not mean to say that "electricity is life," but it means to say that the processes of living proceed according to electric laws, releasing by the electro-chemical action of oxidation, combustion or katabolism, heat, mechanical, electric and other energies, with the production of the waste products of excretion, urea, uric acid, creatinine, etc., and storing or rendering potential the same energies by the electro-chemical action of anabolism, with the production of formed chemical products essential, in the case of the animal, to its specialized existence (ferments, fats, glycogen, etc.).

It claims as a speculative postulate, that the fundamental starting point of both release and storage of energy, of the destruction and the construction of products, of katabolism and anabolism; of, in short, metabolism, is situated at protoplasmic foci consisting of protoplasm oxidized (or similarly attacked), and the oxidizing or attacking electrolyte, of protoplasmic voltaic couples—that the protoplasmic area attacked is therefore electro-positive, and that, as a consequence of this initial action at the electro-positive area or element, a secondary constructive, storing and anabolic chemical reaction is accomplished at a protoplasmic electro-negative area or element—in short, that anabolism is secondary to and dependent upon the initial katabolism.

It means to say that the animal continually dies that it may live—that its constructive metamorphosis is initially dependent upon its destructive and more concisely, as regards the constructive, that it is due to the chemical union of substances set free at the positive element by oxidation and allied actions, and uniting with other substances at the negative plate, antecedently oxidized or not—that, in short, katabolism and anabolism are interallied in an electro-chemical cycle composed of protoplasmic voltaic couples, where katabolism initiates that movement which results both in waste products and formed products, and which, when it ceases, is death of the part or of the whole.

It is this katabolic beginning, signalled by the focal positivity, that we may hope to influence by an applied external energy, and thus influence those life processes which underlie it. And since this initial katabolic centre is the source of heat, mechanical force, electric energy, and of all the other phenomena of life, normal as well as morbid, we are in a position to suggest, that this electric index of demonstrable and invariable electro-positive polarity is a guide which may enable the physician to thread the labyrinth of health and disease, and to apply a counter or an aiding energy in such a manner as to affect the normal or morbid phenomena, by affecting their initial and underlying chemico-biological processes. As regards electric energy, it is believed this may be accomplished in the manner outlined.

Dr. Von Raitz: I have nothing to add to what Dr. Morton has spoken. There is not a point that can be touched; everything is true, everything is perfectly explained. This is a very important paper, and I am glad to call attention to it. If everybody will follow this, he will see what he wants and understand it perfectly, and it will show him where he should apply one pole or the other and have success, and the application of the negative and positive pole has led to very great confusion among electro-therapeutists.

Dr. Goelet: It is a little too much to expect a gynecologist to discuss a paper by a neurologist, and especially a New York neurologist, as they do not think we know anything about it; but Dr. Morton is an exception to the rule, and his presence shows that we do know something of electricity. I move a vote of thanks for his very valuable paper. I think he has opened a grand field of thought which many of us will find of value. It opens the very point we are struggling for—the proper application of the poles. If we stop to reason and think what we will do before we begin, we would hesitate to do what we do now with impunity.

(The vote of thanks unanimously carried.)

Dr. Hayd: I must say, if Dr. Morton realized how anxious I was to get here to listen to his paper he would know the interest I took in it.

He has not only carried us through life, but through disease; he has shown us that life exists by chemical action, provided that this chemical action is in equilibrium, when waste is supplied as demand requires it. He has shown how disease develops certain elements, the result of chemical decomposition, and in this chemical decomposition it exerts its polarity, and by reason of this beautiful law he has developed, has taken us into elysium—a euthanasia, where he will continue to live forever, and where he will supply the necessary oxygen to continue life. I shall be pleased to have his paper to study it more carefully. I do not feel competent to talk about it until I have given it careful study.

Dr. Nunn: It is almost impossible to approach a discussion of a paper of this character without considerable feeling and trepidation. So thoroughly written, so thoroughly thought out; involving problems so deep concerning the life of man here and almost hereafter.

While, of course, I must thank the doctor for the very deep and very honest work he has done, still it does seem to me that we must not base all our theory on the chemical action. I think it would be misleading to do so. There must come in beyond that a great vital force, or the great unknown, as the doctor expresses it. We are treating the unknown with the unknown, and still beyond that comes the unknown, and yet beyond that the unknown.

We talk of electricity flippantly as a fluid or force; we theorise with it, but we come up against a stone wall every time. What is it? There is no doubt of it as to the chemical action, and that that is one of the great forces with which we have to deal, and in the treatment of certain diseases it is the one which we have to keep in view; but it is not the one we have to keep in view in all cases. There is that vast field of statistic electricity which has little or no chemical action at all, and as the doctor is an expert in that he can no doubt tell us all about it.

It would be impossible to go into life forces; but I think magnetism is nearer a life force than electricity is. Now, the question as to what is electricity, and what is the chemical change going on, is one we all have thought about to a great extent, and it is a very puzzling thing to know what it is which produces the certain chemical changes which we think are chemical. To illustrate my meaning is very difficult. What is taste? We do not know. A certain substance taken in the mouth gives a taste, but what, we do not know, and yet it is not a chemical effect.

Speaking of the electric polarity of the body, there are of course great currents going on in the body, and that would suggest a question as to whether the conditions that we find in various portions of the body are always identical electrically; thus for instance, the right arm and shoulder are relatively positive to the left arm of the body; it is so stated. If one is electro-positive, the other electro-negative, it may or may not be that new growths may be in the positive condition, it may be as in the static battery or positive to the earth. That has been proven, I think. Keeping so closely to the chemical theory makes us lose sight of another great fact that every molecule of the body is a rational being to a certain extent. I believe that every single blood corpuscle is in itself an independent animal and being as far it goes. I know of no other way in which you can explain the fact that the blood corpuscle takes up its oxygen and nutrition and deposits it in the tissues and goes away again. I am unable to understand this selection except by that.

Clinically I have been in the habit of using this rule and I have found it a good one to follow: Wherever there is tenderness upon pressure, and inflammation, I use the positive, and wherever there is a swelling, as in tumors and chronic diseases, there I use the negative. I direct the vital forces over the seat of inflammation and toward the distant point; wherever I want absorption I direct the current towards that and increase with the action.

Dr. Robinson: When Dr. Morton finished his paper I made up my mind not to say anything about it. This paper is the result of months of careful and profound thought. It is almost impossible to discuss it. It is a remarkable production, full of thought and research.

To emphasize a point, I go back two or three years ago when I was in Vienna, which place I consider the greatest electro-therapeutic centre in Europe, presided over by Benedict. There are many more patients treated there than in any other clinic, and the kind of work done there by himself and assistants is wonderful. After his thirty years of study he has come to the conclusion that polar action is null, and I have imbibed that theory. I lay no stress on the poles at all, but I think differently to-day, and this is a most interesting point that Dr. Morton has brought forward. It is certainly a most profound and logical theory, and the proof we have had, I think, is good evidence and we should accept the polarity treatment.

Dr. Von Raitz: So far as Dr. Benedict, of Vienna, is concerned, I know he claims that, but it has been proved by putting the positive to excessive growths it makes them worse, and by applying the negative it makes them better. No matter who said anything, this is a fact, and this is a new law, and Dr. Morton will be regarded as making a new epoch.

Dr. Walling: It has been my practice to use the positive pole in inflammatory conditions and considering the chemical laws that like poles repel, and in disease where there are lower vitalities and a lack of nutrition, I have considered it a negative condition and have used the negative pole as a stimulation.

Dr. Massey: I am quite of the opinion that the paper is not to be discussed by us at present. It is founded upon well-digested thought, but after the great fiasco in Berlin a year or more ago, we should be slow in accepting new doctrine. We want practical proof. We want him to give us specific instances where certain diseases were positive and others negative. Even after we get those facts we want to disabuse our minds of the names negative and positive now applied to the poles. In 1885 I read a paper before the American Neurological Association in which I took issue in regard to our nomenclature and thought that the names of the poles should be reversed. The vast weight of evidence given was derived from static electricity and from the action and observation of currents in vacuum, particularly the Crooke's tubes, and not a little of it from the normal formula of polar action of muscle. All of these went to show that the present theory of the direction of the current was incorrect. But I do not wish to say that if I were correct that it would involve the statement here made by Dr. Morton. If the names are wrong the facts are there, and facts stand.

In regard to the use of the negative pole: it is true that I have advocated largely the use of the negative in vaginal applications, and consider it more efficient. I understand that this is Apostoli's practice also. I have not, however, founded my practice upon any theory of this sort, but upon observations that the positive pole causes an eschar if concentrated when bare. Now that I cover my vaginal electrode with soaped absorbent cotton, I am using the positive pole more often; but even then I have had some practical difficulties to deal with which cause me to change the poles on account of the acid accumulation in the vagina with its cauterant action.

Whatever result may come from this paper, it should be remembered that it deals only with the chemical side of disease, and makes no allusion to those other diseased conditions which must so often be combated at the same time—microbic germs. Whatever the shortcomings of the paper, it applies beautifully to disease, and has elements of epoch-making thought.

Dr. Morton: I thank you warmly for the very kind and respectful consideration you have given to my thesis here expressed. I will say that it has been stumbling around in my mind for six months, and I did a great deal of work in thinking the paper out, and I am very glad that you have been thinking so much on the subject and have been so kind as to think there is merit in it. I had expected more criticism.

(*To be continued.*)

NECROLOGY.

W. H. Long, M.D.

At a joint meeting of the Faculty and students of the Michigan College of Medicine and Surgery, the following resolutions were unanimously adopted, relative to the death of W. H. Long, M.D., Emeritus Professor of Military Surgery.

WHEREAS, We, the Faculty and students of the Michigan College af Medicine and Surgery, have learned with deepest regret of the death of *Dr. W. H. Long and.*

WHEREAS, Dr. Long was a member of the Faculty of this College, and that, in a great measure to his untiring efforts the college owes its existence and growth. Be it

Resolved, That in the death of Dr. Long, the Faculty has lost a sterling friend, a wise counsellor, and an enthusiastic colleague; the students, one of the wisest of teachers, both practical and learned; one whose influence extended beyond the class-room, into the warp and woof of student life.

Resolved further, That the Medical profession has lost one of its brightest ornaments; the country one of her strongest patriots; and the poor and the sick a helper and a sympathetic friend. While a resident of this city we know that his ear was always open to the cry of the suffering, and his skilful hands were constantly relieving the pain of the unfortunate.

[illegible] That these resolutions be spread upon the records of [illegible] y be published in the JOURNAL of the American [illegible] and that a copy be sent to the mourning children, with the assurance of our deepest sympathy.

Committee,
HAL. C. WYMAN, M.D.,
DAYTON PARKER, M.D.,
W. R. SEURR, M.D.,
M. V. MEDDAUGH,
CARYL B. STORRS.

MISCELLANY.

OFFICIAL RECOGNITION OF MERITORIOUS SERVICE.—The Major-General of the Army recently reported a list of officers and others who distinguished themselves by meritorious conduct in the year 1890, and during the late campaign against the hostiles in South Dakota. The names of the following medical men are upon this roll of honor:

Surgeon and Lieutenant-Colonel Dallas Bache, Surgeon and Major J. V. R. Hoff, and Assistant Surgeons and Captains H. P. Birmingham and W. L. Kneedler.

[The following poem was read at the dedication of the Camden City (N. J.) Dispensary, on January 9th, by Hon. Henry C. Bonsell, editor of the *Camden Post*.]

In holy shrine and temple fane
We here assemble once again
To herald on the trump of fame
The Doctors.

As here the Medicos we meet,
And learn new wisdom at the feet
Of those whom we are proud to meet,
The Doctors.

Magicians who our ills assuage,
Who take our pulse and even gauge
Our temperature when fevers rage.
The Doctors.

Who mitigate our many woes.
And patch us up from scalp to toes
With porus plasters 'stead of clothes,
The Doctors.

Who fill our craws with coated pills,
And nasty draughts the de'il distills,
And for it send us swinging bills,
The Doctors.

For which they oft our censure earn
As with indignant spleen we burn,
But to them we are forced to turn,
The Doctors.

Who like the fishes swim in schools,
Scoffing at the paltry fools
Who disregard conventional rules.
The Doctors.

And to this day they can't agree
On tweedle-dum and tweedle-dee,
But all unite upon the—fee,
The Doctors.

Yet when we feel we're getting sick,
We send for M.D.'s p. d. quick,
According them the winning trick,
The Doctors.

For when we're in the grip's fell clutch
We're not so proud—not overmuch,
But reach out for the only crutch,
The Doctors.

So, when dread anguish wrings the brow,
Without reserve we all allow,
"A ministering angel thou,"
The Doctor.

And in the hour of sore distress,
The rich and poor alike express
Their fervent thanks, and say "God
bless The Doctor."

For no respecter of persons he,
Nor purse, nor place, as all agree,
He fighteth for the victory,
This Doctor.

The victory o'er disease and death,
This of his nostrils is the breath,
"This is my mission," answereth
The Doctor.

And many dollars doth he lose,
And many men do him abuse,
Then let's commend to tuneful muse
This Doctor.

The muse recounteth knightly skill,
Then let the muse this truth instill
And credit pay, and pay the bill
Of the indispensable Doctor.

A CURIOUS epidemic has been decimating the aged inmates of British workhouses. It appears as a general eczema, runs a definite course, and proves fatal in about one-eighth of the cases. It is not certain as yet that the disease is contagious, though the limitation to several neighboring workhouses renders this probable. But the true explanation may be found in the quality of the food.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 9, 1892, to January 19, 1892.

Capt. Walter W. R. Fisher, Asst. Surgeon U. S. A., is granted leave of absence for one month.

Capt. Marshall W. Wood, Asst. Surgeon U. S. A., now on leave of absence, will report to the commanding officer, Ft. Columbus, N. Y., for temporary duty at that post during the absence of Capt. W. W. R. Fisher, Asst. Surgeon.

Major Julius H. Patzki, Surgeon, having been found by army retiring board incapacitated for active service, on account of disability incident to the service, is, by direction of the President, retired from active service, to take effect January 9, 1892, *under provisions of section 1251*, Revised Statutes.

Capt. Henry S. Kilbourne, Asst. Surgeon U. S. A., is relieved from duty at Willet's Point, N. Y., and will report in person to the Superintendent U. S. Military Academy, West Point, N. Y., for duty at that station, relieving Capt. W. Fitzhugh Carter, Asst. Surgeon U. S. A. Capt. Carter, upon being relieved by Capt. Kilbourne, will report in person to the commanding officer, Willet's Point, N. Y., for duty at that station.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending January 16, 1892.

Surgeon J. Parker, ordered to the U. S. S. "Charleston."

Medical Inspector C. H. White, detached from U. S. S. "Charleston," and ordered home.

Asst. Surgeon George A. Lung, ordered to examination for promotion.

Asst. Surgeon Patrick H. Bryant, ordered to examination for promotion.

Asst. Surgeon Luther L. von Wedekind, ordered to examination for promotion.

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ORIGINAL ARTICLES.

THE NERVOUS AND MENTAL PHENOMENA AND SEQUELÆ OF INFLUENZA.

Read before the Philadelphia County Medical Society, January 13, 1892.

BY CHARLES K. MILLS, M.D.,

OF PHILADELPHIA, PA.

All practitioners have been struck by the prominence of nervous and mental phenomena in influenza; and much has been written, but mainly in a desultory way, about the symptoms of the disease which are referable to the nervous system, and its more or less persistent nervous and mental sequelæ. The part played by the nervous system in the etiology and history of the disease has been variously interpreted. One holds that it is a "nervous disease," without explanation; another describes it as a pneumogastric neurosis; another as a neuropathy due to ptomaine poison. According to Blocq, cited by Church[1], the primary infectious action takes place upon the nervous system during the disorder, while sequelæ are to be attributed to secondary infection from ptomaines. Cheston Morris,[2] of Philadelphia, advances the theory that the general symptoms of influenza may be traced to a derangement of function, or partial paralysis of the pneumogastric nerve, and that the affection is brought about by conditions of the atmosphere, which particularly tax the cardio-pulmonary apparatus which is regulated by this nerve, a view which, after all, relegates the disease to an atmospheric or infectious cause. Graves long ago referred the bronchial and pulmonary symptoms of grippe to lesions of the nervous power of the lungs, and Blakiston regarded it as a disorder of the nervous system, with concomitant derangement of the organs of digestion, circulation, etc. Levick,[3] who cites the last two authorities, holds that certain symptoms are produced when the poison is expended on the sensorium, and certain others when its influence is chiefly exerted on the respiratory centres.

The analogies or relationships between influenza and other diseases generally recognized as belonging to the nervous system, either primarily or because of the situation of their most notable lesions, have been strongly brought out by able writers, as by Levick, for example, who has even suggested that epidemic cerebro-spinal fever, or cerebro-spinal meningitis, may be simply a malignant form of influenza, a view to which he was led because of the resemblance in the symptoms of the two diseases which differ in degree rather than in nature, and also because for three centuries the two have occurred coincidently or in close sequence.

Grasset and Rauzier,[4] in a monograph on the grippe of 1889-90, lay great stress on the enormous predominance of the nervous over the catarrhal elements in the epidemic, as evidenced in the high fever, great cephalalgia, the marked delirium, the widespread pain, and the excessive nervous irritability. They refer to cases communicated by M. Coustan, in which the entire symptomatology of the disease seems to have reduced itself to a horrible migraine. They review the literature which shows that writers of various countries are unanimous in proclaiming the importance of the nervous element—referring to Austrian, Russian, Belgian, German, English and Polish contributions.

According to Schmitz,[5] who read a paper on the subject before the Psychiatric Society, at Bonn, influenza is a disease of the nervous system with secondary involvement of the heart, lungs, and digestive organs. In several hundred cases which he observed the nervous symptoms were always primary, followed in every case by secondary involvement of the other organs.

What seems to be needed is an analysis and practical grouping of the facts, almost too numerous to handle, which shows the important part played by the nervous system in the development, progress, and results of the disease. How is the nervous system affected by influenza? What are its primary or direct effects on the nervous system, and what are some of the more persistent and permanent impairments, and how are these determined by the disease? What are its acute nervous and mental phenomena, and what are the most common sequences? What is the probable pathology of these states, and what treatment is best in view of the neurotic characteristics of the affection?

The briefest consideration of the subject brings forcibly to mind the fact that all diseases of infectious or toxic origin—epidemic, endemic, sporadic, or accidental—may strike any or all parts of the nervous system with a result which will be proportionate: first, to the virulence of the infecting agent; and, second, to the resistance of the individual, whether this is due to constitutional predisposition or to reductions, the result of previous injury or disease. The microbes may differ, but a bond of union and close resemblance can be recognized between the effects on the nervous system of all contagious and infectious diseases, as variola, scarlatina, diphtheria, measles, whooping-cough, typhoid or typhus fever, leprosy, mumps, cholera, erysipelas, puerperal fever, influenza, or cerebro-spinal meningitis; of all such constitutional and diathetic affections, as tuberculosis, gout, rheumatism, and diabetes; and of all such toxic agents artificially introduced into the system, as alcohol, mercury, lead, arsenic, copper, and poisonous gases. These diseases, these diatheses, and these poisonous metals and gases produce, or may produce, nervous and mental phenomena of the same character, differing in degree in particular cases and for special reasons.

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[1] Church: Chicago Medical Record, 1891.

[2] Morris: American Lancet, March, 1891.

[3] Levick: Am. Jour. Med. Sci., January, 1864, and republication in pamphlet form, with notes of the influenza of 1889-90.

[4] Grasset and Rauzier: Le on sur la Grippe de l'Hiver, 1889-90; Montpellier and Paris, 1890; Monograph of 98 pages.

[5] Schmitz: Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medizin, 179, 1891. Cited in American Review of Insanity and Nervous Disease, December, 1891.

In all these affections at the time of acute onset, if the illness is of a serious character, such symptoms are present as great mental and nervous debility, irritability, restlessness, sleeplessness, or the opposite states of torpor, stupor, hebetude, or coma; delirium; vertigo or syncope; headache, browache, napeache, backache, and limbache; pains of all degrees of severity referred to various nerve areas; hyperæsthesis of the skin, of muscle-masses, or confined to nerve-trunks or branches; spasms, local or general, and with or without unconsciousness; sometimes mental disturbance amounting to a true mania or melancholia. During the progress of such affections any one or several of these enumerated symptoms may be present. Supraorbital pain, for example, may be the only prominent nervous symptom in a case of influenza; headache and backache in diphtheria; hyperæsthesia in mumps, diabetes, or gout; and mania in a case of puerperal infection. Any infectious or toxic disease may, in brief, produce the same symptom, syndrome, or train of phenomena; and—which is the main point—for the same reason, namely, because of the introduction into the system of an agent which directly and powerfully poisons nerve centres, and possibly also nervous conducting tissues.

Following all infectious, diathetic, or toxic diseases, moreover, or directly springing from them, common experience teaches that we may have great nervous or general weakness; forms of insanity of the depressive type; paresis and paralysis of every grade from an affection of a single muscle to that of all the extremities, and even more; localized spasm or cramp; general convulsions; pains in nerves, muscles, and joints; and losses or perversions of sensation.

These symptoms and conditions, which may occur at the onset, during, or after the subsidence of any infectious or toxic disease, are those which constitute the nervous features of the prevailing epidemic. I have introduced the subject in this way because it seems to me that it is this comprehensive grouping of generically similar phenomena which enables us to most readily grasp a subject even for practical purposes. We differentiate phenomena in our daily labor, which we can only understand by properly grouping them and referring them to a common or to related causes.

Any attempt to classify the nervous and mental phenomena of influenza must be attended with great difficulties. These are, in the first place, symptoms and conditions which, although manifested in non-nervous organs, are directly traceable to a nervous origin; secondly, affections which would be recognized by all as properly referred to the nervous system; and, thirdly, affections occurring in nervous tissues and organs, although strictly speaking, not nervous diseases.

I will refer very briefly to the first of these classes, although of much importance. I will not, however, discuss the nervous origin of the fever of influenza, nor will I attempt to explain the catarrh, indigestion, etc., on some neurotic theory, as such a method might lead us anywhere, and for our present purposes would be unprofitable. I wish simply to emphasize the fact that some of the most prominent pulmonary, cardiac, and vascular affections of influenza can best be explained on neural theories. Many personal observations have led me to the conclusion, not new, which has recently been well presented by Elliott,[6] of New Orleans, that the pneumonias of influenza are often due to vasomotor paralysis, that they are, in fact, forms of blood stasis or passive congestion from vasomotor paralysis, which in its turn is dependent upon the action of the infection upon the pneumogastric centres and the nervous system in general. A distinct difference can be made out between the true pneumonic lung and this "grip-lung," as it has been termed by Elliott. Graves long ago attributed the œdema of the lungs which occurs in influenza to an affection of the vagus.

"The grip-lung," according to Elliott, "has a long and very varying condition of passive blood stasis unaccompanied by râles. If resolution occurs within three or four days, it is accompanied by large mucous râles, and no time is given for the slow appearance of bronchial breathing or bronchophony; but during the long continuance of the blood stasis, an exudation occurs, increasing slowly, which will give in time. some bronchophony and bronchial breathing, but never so complete as in pneumonia. Resolution never occurs in these cases with the suddenness that characterizes it in acute pneumonia. The condition passes off as gradually as it formed. The sharp, clear-cut, and sudden phases of the pneumonic attack separate it clearly from the obscure, irregular and slow phases of the *grip-lung*."

Many disorders in various parts of the body are best explained on this theory of local vasomotor paralysis, although it is not necessary to attempt to force this explanation for all. Hæmorrhages, minute, or even of considerable size, occurring in diverse localities, as in the retina, membrana tympani, and internal auditory apparatus, or in the skin, or mucous or serous membranes anywhere, may be due to deficient vasomotor tonus. Brain, kidneys, liver, or pelvic organs may suffer from forms of passive hyperæmia, sub-acute or chronic, which are, in fact, due to forms of vasomotor palsy. Occasionally we meet with cases of vasomotor disorders of the extremities, such as flushed or pallid fingers.

Even trophic affections have occasionally been observed. Wilson,[7] for example, refers to gangrene of the lungs as one of the less common complications. Abscesses of the limbs have been recorded. Grasset records two observations of eschars occurring in young subjects in the absence of prolonged decubitus. The greater tendency in surgical cases to suppuration may have its best explanation in the depression of healthful vasomotor and trophic influence.

The peculiar forms of pulse, and the uncertain or perverted action of the heart, extending in some cases to cardiac palsy and death, are in a strict sense nervous phenomena due to paralysis, partial or complete, of the inhibitory apparatus of the heart.

Let me take up those symptoms and affections which would clearly be recognized as belonging to the nervous system.

I believe, with Church, "that the infection of influenza has a marked action upon the nervous system which may give rise to immediate acute manifestations or to remote and persistent conditions; and that in the predisposed, grippe is competent to cause marked excitement or great depression of the motor, censory, and mental nervous apparatus."

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[6] Elliott: The Climatologist, vol. i, No. 1, August, 1891.

[7] Wilson: American System of Practical Medicine, vol. i, p. 870.

Great nervous and mental prostration, both as an acute manifestation and as a persisting sequel, has engaged the attention and required the treatment of all practitioners. The mental depression often present as an initial symptom has been, in some cases, simply overpowering. Some of the patients are affected like individuals whose mental and motor centres have been poisoned to the limits of human endurance, while still permitting the retention of consciousness. In other cases even consciousness itself has been overwhelmed.

Not a few patients who suffered from attacks of influenza during the early period of the present epidemic are still victims of profound neurasthenia. I refer now to cases which are not distinctively of the melancholic type. These neurasthenics are unable to endure a fair amount of work; their nervous forces are soon routed; they are weak, worrisome and unrecuperative. The cardiac weakness which has been left is undoubtedly in part the cause of this neurasthenia, and with reference to this, Church says that "the persisting neurasthenic condition, which so usually follows influenza, is attributed by some to cardiac weakness of nervous origin, and this contention is not without weight, if it is observed that even after appetite, sleep, body-weight, and physical functions have been long restored, the slightest exertion immediately produces disproportionate fatigue accompanied almost invariably by either a retarded or more frequently accelerated pulse, and rarely by præcordial distress and even by angina pectoris."

Curtin and Watson,[9] whose experience in influenza has been enormous, say that although general nervous prostration often extended over long periods without any discoverable local cause, it was always worth while to examine the urine with care. "Sometimes a nephritis, sometime a faulty digestion or hepatic inaction seemed to underlie the general condition in latent form. These cases, by enforced rest and attention to local complications, gradually recovered. These cases and nervous cases generally, were very disappointing when sent to the seashore during convalescence."

Among organic nervous diseases which have developed during the influenza or have been left in its wake, are in the order of their frequency, so far as my personal observations have gone, neuritis, meningitis, myelitis, and cerebritis, or various combinations of these inflammatory affections, as, for example, concurrent neuritis and myelitis, meningo-myelitis, or meningo-encephalitis.

Probably no single affection of the nervous system has been so common during and after the grippe, and particularly as a sequel of the disorder, as neuritis. Almost every variety of neuritis as regards location and diffusion have been recorded, and have come under my personal notice. Multiple neuritis, while not common, has not been rare: and I have seen a concurrence of this affection with poliomyelitis in the same case. Isolated neuritis of almost every cranial nerve has been recorded, with such resulting conditions as optic atrophy,loss of smell and of taste, ophthalmoplegias, both internal and external; oculo-motor, facial,and pseudo-bulbar palsies of various types, including true pneumogastric paralysis. Several cases of specially located affections of the sympathetic ganglia or nerves have been recorded. Of the forms of local neuritis most common might be mentioned the supra-orbital, intercostal, sciatic, and plantar.

An interesting case of neuritis with a myxœdemoid condition of the limbs presented herself at the Philadelphia Polyclinic recently. She had a sharp attack of influenza five weeks ago, having been in good health up to that time, except five years since, when she suffered for several weeks with inflammatory rheumatism. On recovering from the influenza, the attack not having been especially marked with nervous symptoms, she was extremely weak in the legs, and was scarcely able to drag herself around. In a few days her feet and legs began to swell and to be painful, and soon became of enormous size and exquisitely tender. She has gradually improved, but still has a condition of firm swelling, which does not pit on pressure, from her knees to her ankles, and also still has great tenderness on squeezing the feet or ankles, or in handling the nerves or muscles of the limbs. She has no cardiac affection.

The articular pain and other so-called rheumatic manifestations so numerous during and after attacks of the grippe, are after all best explained on the theory of infectious neuritis or myositis.

These cases with articular and other pains, and with swelling, recall the endemic or epidemic form of multiple neuritis known as beri-beri, in which the chief phenomena are œdema and paralysis of the limbs, with marked pain, hyperæsthesia and paræsthesia, followed later by anæsthesia, lost knee-jerk, and depressed electrical reactions. Myositis certainly, and probably also periositis, occur as complications or sequences of the influenza, and usually in association with neuritis of some type.

Many of the reports speak of the frequent occurrence of various neuralgias. Doubtless a distinction is seldom made by observers and recorders between neuralgia and neuritis, which are or may be separate affections. Practically these cases should be regarded as neuralgic, in which pain is referred to certain nerve lines or radiations; but in which pain on pressure, and the other phenomena of neuritis, such as anæsthesia, vasomotor, and trophic disorders and even paralysis, are absent. In my own experience the cases which could properly be diagnosticated as neuritis are by far the most common. The distinctively neuralgic pains are probably due to toxæmically depressed or exhausted sensory nerve-roots or centres in the cord and bulb.

Of diseases of the spinal cord proper, occurring as complications or consequences of influenza, the reported cases are not numerous, but they are none the less important. A few cases of myelitis have been put on record by native and foreign observers—one that I recall in which all four extremities were paralyzed. As would be expected, in accordance with the analogies with other infectious and toxic diseases, anterior poliomyelitis is the most common type. I have had several cases of temporary paralysis of one or more limbs, which, owing to the absence of pain and of cerebral symptoms, were apparently spinal in their origin, and probably light forms of inflammation. Concurrent multiple neuritis and poliomyelitis has already been referred to as having been observed by

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[8] Curtin and Watson: The Climatologist.

by no means proof that this disease and epidemic cerebro-spinal fever are identical. It simply emphasizes the point with which I started, viz.: that every infectious or poisonous agent introduced into the economy, may produce the same or similar pathological results in the nervous system. Largely according to the vulnerability, special or general, of certain tissues and organs, will be the preponderance of this or that form of so-called disease—for instance, of neuritis, myelitis, meningitis, cerebritis, or of combinations of these affections. All infectious and toxic diseases give neuritis as the most common acute or chronic inflammatory manifestation, although myelitis, cerebritis and meningitis may occur. Even in cerebro-spinal fever, as I was perhaps the first to point out, multiple neuritis is a common complication; but the infection being virulent and overwhelming, we may not only have meningitis, but even meningo-encephalitis, or meningo-myelitis, with all their malignant phenomena and permanently disastrous results.

Vertigo is another symptom, like pain, often improperly referred to meningeal or cerebral inflammation. It is sometimes due to such disease, but occurring in influenza, it may arise from other causes, as, for instance, from extravasations into the labyrinth, or other portions of the auditory apparatus.

Müller[10] reports the case of a man, 50 years old, who after influenza presented great physical exhaustion. In a few weeks his mind seemed affected and he became somnolent, so that he could be aroused only with difficulty, and would then fall asleep again. In this respect the case was much like the one reported by Priester. Pain upon pressure was present over the vertebræ, the neck was rigid, the pulse was small and irregular, the skin reflexes were diminished, and the tendon reflexes were absent. In two weeks he began to improve. The author believed the case was one of spinal cerebro-spinal meningitis, similar to that seen after infectious diseases.

Without entering into a discussion of their pathology or their peculiarities, I will briefly mention a few other forms of nervous disorder, occurring during, or as apparent sequelæ of, the influenza, examples of which have come under my personal observation. Convulsions have been reported by various observers, and in a few instances the convulsive habit has been established, and the patients have remained up to time of report as cases of epilepsy. I have seen two such cases. Hystero-epilepsy and other grave hysterical phenomena have been initiated, or have recurred in cases in which the symptoms had long been dormant. Of local spasmodic affections I have seen no record, but one case of persistent clonic torticollis, with some pain and tenderness in the spinal accessory distribution, has been in attendance at the Philadelphia clinic. Two cases of facial paralysis, occurring immediately upon the heels of influenza, have come under observation.

Many affections not of, but occurring in, the nervous system, have been reported as complications or sequences of the influenza. These include such affections as apoplexy, due either to hæmorrhage, thrombosis or embolism. One of my Polyclinic patients, a man 37 years old, was attacked with influenza in January, 1890. He was not confined to bed, but suffered severely from headache, cough, and persistent general weakness, and in February he was suddenly paralyzed in the right half of his body, and completely aphasic. Well-marked cardiac murmurs were present, and the grippe in this and similar cases is probably causative by lighting up an old endocardial trouble, or through the blood dyscrasia and general prostration which it leaves.

Various observers have reported cases of monoplegia and hemiplegia, without indicating the pathological character.

Recently, in consultation, I saw a typical hæmorrhagic apoplexy occurring in a case of influenza in a woman about 60 years old, who had previously been in fair health, and was not known to have had any disease of the kidneys or heart, although her vessels were somewhat atheromatous. Dr. S. S. Prentiss,[11] of Washington, has reported three cases of cerebral apoplexy occurring during the progress of the influenza. One was in a man of 57 years of age; another in a man of 87; a third in a woman of 67. One of these was probably hæmorrhagic, the other two, from the histories, were probably from thrombosis. In cases of this character, the infection of the disease acts to bring about an apoplexy, both by the changes which it produces in the blood, by its effects upon cardiac action, and by the general debility induced. Such apoplexies might occur from other depressing causes; they are to be regarded not as phenomena, but as accidents of the epidemic.

Uræmic convulsions in patients suffering from chronic Bright's disease have been precipitated by the influenza, and it has seemed to me to have been active in lighting up lurking syphilitic diseases.

In one case of paretic dementia of somewhat irregular type, seen in consultation, the initial symptoms of the disorder were observed soon after recovery from a severe attack of grippe, the wife and friends of the patient in fact attributing the mental disorder to this attack. The probabilities are that syphilis was present, but latent, prior to the epidemic.

Purulent meningitis and brain abscesses have been somewhat frequently noted in connection with the numerous instances of otitis media.

The relations of influenza to insanity have not received much attention from writers. Mairet,[12] of Montpellier, has recently published a lecture on the subject delivered at his clinic for mental and nervous diseases. Rush, who is referred to by Mairet, speaking of the epidemic which lasted from 1789 to 1791, and particularly of the year 1790, mentions that several persons were stricken with symptoms of insanity, and that one attempted suicide; he also speaks of several having had hallucinations of sight. Bonnet, reporting on the epidemic of 1837, cites one case which was stricken with a furious mania as the result of the grippe; and Petrequin, referring also to the same epidemic, records several patients tormented by melancholy ideas, and states that four or five suicides were accomplished or attempted at the hospitals in Paris.

The following conclusions compress into small compass so much that is valuable with reference to the relation between influenza and the psychoses that I cannot do better than quote them. They are reported as the conclusions arrived at by Dr. Leledy, and were presented to the Medical Society of London by Dr. Savage.[13] 1. Influenza, like other febrile affecme in one case, in which the neuritis, which was not severe, soon disappeared, but a limited paralysis, evidently spinal in character, was left behind.

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[10] Muller: Berlin klin. Woch., No 37, 1890—cited in American Journal of Insanity and Nervous Diseases, December, 1891.

[11] Prentiss: Medical News, August 29, 1891.

[12] Mairet: Grippe et Aliénation Mentale. Montpellier and Paris, 1890.

[13] Savage: Lancet, No. 3558, and Medical News, January 16, 1892.

Several observers have reported cases of bulbar paralysis, and one striking example of this disease, attributed to the grippe, has come under my own observation, although exactly how far the influenza was *responsible it is difficult to say.* This patient, a clergyman, had a severe attack of influenza in May, 1890, and during its progress continued to work, and ate but little. In a very short time he noticed he was losing power in his hands, which soon atrophied. In January, 1891, he began to have difficulties of speech, and, briefly stated, the case went on until November, 1891, when he was first seen by me; his symptoms were those of well-marked bulbar paralysis, with progressive muscular atrophy, chiefly involving the upper extremities.

In accordance with analogy, we would expect the occasional occurrence both of nuclear polioencephalitis, and even rarely Strumpell's cortical polioencephalitis. One or two of the few cases of probable polioencephalitis of the latter type have occurred in patients suddenly stricken with fever, loss of appetite, and other symptoms which may have been due to infection.

Priester[9] has reported the case of a man fifty-four years old who was taken with influenza in February, and in the beginning of March was seized with extremely violent headache which resisted all medication, and later the patient became deeply somnolent, remaining in this condition for four weeks; he could be aroused, but was apathetic and soon slept again. Reflexes and temperature were normal; pulse from 40 to 60. The patient had no paralytic symptoms, and slowly improved. His affection, according to the reports of the case, closely resembled Gerber's disease—paralyzing vertigo—although the latter is a disease of the warm weather. Tumor could be excluded by the absence of all focal symptoms a year before the attack. The most probable cause he believed was a pathological process, involving the central gray matter of the third ventricle, which would bring the disease into close relation with polioencephalitis of the nuclear type. Dr. G. J. Kaumheimer, who translated this report for the *Review of Insanity and Nervous Disease*, December, 1891, observed an exactly parallel case which originated in April, and lasted into July before recovery took place.

That meningitis, either cerebral, spinal, or cerebrospinal occurs during the decline of the influenza cannot be doubted in the light of the evidence which has been presented by various observers, *and particularly during* the epidemic of the last three years. It is, however, a comparatively rare concomitant or complication. Some of the facts adduced as proofs of the existence of meningitis, and some of the cases reported as examples of the disease, are clearly instances of improper interpretation. The intense cephalalgia and rhachialgia; the atrocious pains variously localized in the face, trunk, limb-nerves, muscles or joints; the vigilant delirium, with hallucinations and delusions, sometimes assuming great gravity; the intense vertigo, with or without nausea and vomiting—these and other well-known nervous manifestations which are so prominent in many cases at the initiation of the disease, are not necessarily evidence of meningitis, or even of meningeal hyperæmia. Rather they are due to an overwhelming toxæmia of the nerve centres and of the brain. Severe and terrible in character at first, they frequently pass away almost as rapidly as they came, which would not be the case if they were the evidences of a true meningitis. The enormous prostration which is left behind shows that the centres of nervous energy have been subjected to a depressing agency of great virulence, not that merely enveloping membranes composed mainly of fibrous tissue and blood-vessels have been congested or inflamed. No reason could be given why such congestion or inflammation should leave such results.

The reports of cases terminating fatally because of meningitis, and even the reports, personal or official, of the frequent occurrence of this affection, must be received cautiously, and sometimes incredulously. They are only to be relied on when confirmed by autopsies, or when from observers who are accustomed to closely differentiate the meaning of nervous symptoms, and particularly of pain.

It may also be worth while, at this point, to refer to the somewhat frequent diagnosis of chronic meningitis as one of the sequelæ of the disease. This diagnosis is usually made because of the presence of more or less persistent pain in or on the head. Experience has led me to believe that this pain is usually neuritic rather than meningeal. Even deep-seated intracranial pain does not necessarily indicate meningitis. They may be due to neuritis, just as certainly as a pain in the hand or foot. The fifth nerve has an immense distribution within as well as outside the cranium, largely to the dura mater, but also to other tissues and parts. It is a pathological possibility to have dural neuritis without a pachymeningitis, and this is the true explanation of some pains, both acute and chronic, which are present in other diseases, as well as in influenza.

The form of meningitis most likely to be present in influenza, is *inflammation of the pia arachnoid* or soft membranes, now often designated lepto-meningitis. From observations, corroborated by autopsies, I know that this affection may exist without pain; while pain of varying degree of severity, and usually intense, is practically invariable in pachymeningitis. Lepto-meningitis, however, is not usually without pain and hyperæsthesia as symptoms, but it may be absent, and its presence or absence will depend upon the location, extent, grade and complications of the meningitis.

While believing that these criticisms upon the sometimes hasty, and the too frequent, diagnosis of *meningitis in influenza, and indeed in many other* infectious and febrile diseases, are just, and can be sustained, it remains true that a genuine meningitis, sometimes of malignant type, may appear during the progress of or closely following influenza. Some very competent observers have reported cases of this character, and in a very few instances the diagnosis has been confirmed by autopsies. The diagnosis should be made to hinge upon the signs and symptoms which would be satisfying as to the occurrence of meningitis from any cause; not alone on the presence of such phenomena as headache, vertigo and vomiting, but on such more convincing manifestations as optic neuritis, and localized spasms or palsies, either cortical or of cranial nerves.

The fact that meningitis, and even the cerebrospinal form, does occasionally occur in influenza, is by no means proof that this disease and epidemic cerebro-spinal fever are identical. It simply emphasizes the point with which I started, viz.: that every infectious or poisonous agent introduced into the economy, may produce the same or similar pathological results in the nervous system. Largely according to the vulnerability, special or general, of certain tissues and organs, will be the preponderance of this or that form of so-called disease—for instance, of neuritis, myelitis, meningitis, cerebritis, or of combinations of these affections. All infectious and toxic diseases give neuritis as the most common acute or chronic inflammatory manifestation, although myelitis, cerebritis and meningitis may occur. Even in cerebro-spinal fever, as I was perhaps the first to point out, multiple neuritis is a common complication; but the infection being virulent and overwhelming, we may not only have meningitis, but even meningo-encephalitis, or meningo-myelitis, with all their malignant phenomena and permanently disastrous results.

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[9] Priester: Wien med. Woch., No. 27, 1159. In American Review of Insanity and Nervous Disease, December, 1891.

Vertigo is another symptom, like pain, often improperly referred to meningeal or cerebral inflammation. It is sometimes due to such disease, but occurring in influenza, it may arise from other causes, as, for instance, from extravasations into the labyrinth, or other portions of the auditory apparatus.

Müller[10] reports the case of a man, 50 years old, who after influenza presented great physical exhaustion. In a few weeks his mind seemed affected and he became somnolent, so that he could be aroused only with difficulty, and would then fall asleep again. In this respect the case was much like the one reported by Priester. Pain upon pressure was present over the vertebræ, the neck was rigid, the pulse was small and irregular, the skin reflexes were diminished, and the tendon reflexes were absent. In two weeks he began to improve. The author believed the case was one of spinal cerebro-spinal meningitis, similar to that seen after infectious diseases.

Without entering into a discussion of their pathology or their peculiarities, I will briefly mention a few other forms of nervous disorder, occurring during, or as apparent sequelæ of, the influenza, examples of which have come under my personal observation. Convulsions have been reported by various observers, and in a few instances the convulsive habit has been established, and the patients have remained up to time of report as cases of epilepsy. I have seen two such cases. Hystero-epilepsy and other grave hysterical phenomena have been initiated, or have recurred in cases in which the symptoms had long been dormant. Of local spasmodic affections I have seen no record, but one case of persistent clonic torticollis, with some pain and tenderness in the spinal accessory distribution, has been in attendance at the Philadelphia clinic. Two cases of facial paralysis, occurring immediately upon the heels of influenza, have come under observation.

Many affections not of, but occurring in, the nervous system, have been reported as complications or sequences of the influenza. These include such affections as apoplexy, due either to hæmorrhage, thrombosis or embolism. One of my Polyclinic patients, a man 37 years old, was attacked with influenza in January, 1890. He was not confined to bed, but suffered severely from headache, cough, and persistent general weakness, and in February he was suddenly paralyzed in the right half of his body, and completely aphasic. Well-marked cardiac murmurs were present, and the grippe in this and similar cases is probably causative by lighting up an old endocardial trouble, or through the blood dyscrasia and general prostration which it leaves.

Various observers have reported cases of monoplegia and hemiplegia, without indicating the pathological character.

Recently, in consultation, I saw a typical hæmorrhagic apoplexy occurring in a case of influenza in a woman about 60 years old, who had previously been in fair health, and was not known to have had any disease of the kidneys or heart, although her vessels were somewhat atheromatous. Dr. S. S. Prentiss,[11] of Washington, has reported three cases of cerebral apoplexy occurring during the progress of the influenza. One was in a man of 57 years of age; another in a man of 87; a third in a woman of 67. One of these was probably hæmorrhagic, the other two, from the histories, were probably from thrombosis. In cases of this character, the infection of the disease acts to bring about an apoplexy, both by the changes which it produces in the blood, by its effects upon cardiac action, and by the general debility induced. Such apoplexies might occur from other depressing causes; they are to be regarded not as phenomena, but as accidents of the epidemic.

Uræmic convulsions in patients suffering from chronic Bright's disease have been precipitated by the influenza, and it has seemed to me to have been active in lighting up lurking syphilitic diseases.

In one case of paretic dementia of somewhat irregular type, seen in consultation, the initial symptoms of the disorder were observed soon after recovery from a severe attack of grippe, the wife and friends of the patient in fact attributing the mental disorder to this attack. The probabilities are that syphilis was present, but latent, prior to the epidemic.

Purulent meningitis and brain abscesses have been somewhat frequently noted in connection with the numerous instances of otitis media.

The relations of influenza to insanity have not received much attention from writers. Mairet,[12] of Montpellier, has recently published a lecture on the subject delivered at his clinic for mental and nervous diseases. Rush, who is referred to by Mairet, speaking of the epidemic which lasted from 1789 to 1791, and particularly of the year 1790, mentions that several persons were stricken with symptoms of insanity, and that one attempted suicide; he also speaks of several having had hallucinations of sight. Bonnet, reporting on the epidemic of 1837, cites one case which was stricken with a furious mania as the result of the grippe; and Petrequin, referring also to the same epidemic, records several patients tormented by melancholy ideas, and states that four or five suicides were accomplished or attempted at the hospitals in Paris.

The following conclusions compress into small compass so much that is valuable with reference to the relation between influenza and the psychoses that I cannot do better than quote them. They are reported as the conclusions arrived at by Dr. Leledy, and were presented to the Medical Society of London by Dr. Savage.[13] 1. Influenza, like other febrile affections, may establish a psychopathy. 2. Insanity may develop at various periods of the attack. 3. Influenza may induce any form of insanity. 4. No specific symptoms are manifested. 5. The rôle of influenza in the causation of insanity is a variable one. 6. Influenza may be a predisposing or exciting cause. 7. In all cases there is some acquired or inherited predisposition. 8. The insanity is the result of altered brain nutrition, possibly toxic. 9. The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza. 10. The curability depends on general rather than on special conditions. 11. The insane are less disposed to influenza than are the sane. 12. In rare instances, influenza has cured psychoses. 13. The insane may have mental remission during the influenza. 14. There is no special indication in treatment. 15. Influenza may lead to crimes and to medico-legal issues.

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[10] Müller: Berlin klin. Woch., No. 37, 1890—cited in American Journal of Insanity and Nervous Diseases, December, 1891.

[11] Prentiss: Medical News, August 29, 1891.

[12] Mairet: Grippe et Aliénation Mentale. Montpellier and Paris, 1890.

[13] Savage: Lancet, No. 3558, and Medical News, January 16, 189

I can indorse from experience almost every one of these conclusions. With reference to the statement that no specific symptoms are manifested, it should be said that while this in a general sense is true, the most frequent type is a form of melancholia.

The cases of active insanity have been observed at the onset of influenza and during its height, but more particularly during its period of decline and convalescence. The published cases have been recorded chiefly as instances of acute mania or melancholia. The commonest type of grippe mental disorder, as I have just stated, is a form of melancholia or lypemania; but as this not infrequently assumes the form of melancholia agitata, it is often regarded as mania by practitioners not accustomed to differentiate the varieties of insanity. These patients are intensely depressed and emotional; they are filled with apprehensions of disgrace and ruin; they believe that they will never recover their former health; they are suspicious and delusional with reference to those who surround them; they are frequently unwilling to eat, or to rest, or to take medicine; and in some cases they have definite delusions of terrible character, for the most part hypochondriacal or religious. They are frequently plagued with the thought of suicide, and sometimes make successful or unsuccessful suicidal attempts. They have been deprived by the ravages of the disease of mental and moral stamina. In the majority of these cases, but not in all, some hereditary or acquired predisposition is present. While, however, the grippe usually gives us mental disorder of special type—a form of delusional melancholia—under special conditions it may be the starting-point or exciting cause of any variety of mental disorder, as mania, paranoia, paretic dementia, hebephrenia, etc., but I can no more than glance at this phase of the subject.

The investigations of Church show that in each year in Cook County, Illinois, the epidemic of influenza has been attended by an increase in the number of proceedings for the commitment of the insane, which he believes cannot be explained by increase or movement of the population of the county.

Of the influenza occurring in hospitals for the insane, I have had no opportunity for observation except in connection with the insane department of the Philadelphia Hospital. A great disproportion has been observed between the number of cases occurring among the women and the men. One hundred cases are recorded as having occurred among four hundred and sixty female patients; and only three in a large number of men. The disease did not prove particularly disastrous among these patients, only three deaths having occurred from pulmonary complications. The cases were, as a rule, not of severe type; less severe than in an equal number of sane patients.

K. Helwig[14] has recorded the results and action of influenza in the asylum at Aarhus, Denmark, and Pritchard has translated and summarized this paper for the *Review of Insanity and Nervous Diseases*, for December, 1891. The account is of such interest that I will give it in detail: "The disease appeared in the asylum January 4, a few weeks after it had first been observed in the neighborhood. Out of 520 insane forty-one were so severely attacked that they were confined to their beds. The disease seemed decidedly contagious. It spread with difficulty on account of the wards being divided one from another. Eight of the twenty-five wards were spared altogether. When a ward would be invaded, the disease would rapidly run its course to proceed to another. The transmission of the contagion could be distinctly seen in the sick wards where those stricken down in other wards would bring the disease with them and transmit it to patients there. Seven patients had pneumonia. A relatively large percentage (6) died, of which four were from pneumonia. Among these was a man with such a severe cerebral disease that he must be excluded (the post-mortem results in the remaining five, which were women, were all more or less similar). The most essential results were extreme hyperæmia of the cranial bones and membranes, where the dura and the brain mass itself twice presented fresh and strongly vascular pseudo-membranes with small hæmorrhages as well. The veins and arteries of the thinner cerebral membrane were filled to bursting with blood; the large basal arteries were so filled with coagula that they stood out like cords, or those of an injected specimen. The brain substance itself was very hyperæmic, and its consistence increased. The average weight of these brains was about the ordinary of those of Aarhus. The writer also gives the history of the man mentioned, and those of the three other cases where influenza could not be diagnosticated during life, including the post-mortem findings of a case of influenza in a (sane) nurse, who died of pneumonia. Here also was great hyperæmia of the brain and its membranes, yet not so pronounced as in the insane cases. The writer has seen influenza accompanied by severe psychic symptoms. In a few cases, the condition resembled acute delirium, which, however, is transient, and seems easily controlled by antifebrin. On the contrary, in two hopeless cases of insanity the disease had such a favorable and curative action that they may be regarded as cured. In both cases there was pneumonia."

The epidemic influenza has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest are abnormally prevalent. The hysterical have become more hysteric; the neurasthenical more neurasthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been impressed upon the community. We cannot afford even to dismiss entirely from consideration the bearings of the epidemic upon the increase not only of suicides, but of other grave crimes.

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[14] Helwig. Hosp. Tidende, R. 3, Bd. viii, S. 729.

Many interesting questions in connection with treatment might be discussed; but as the subject of treatment has been assigned in this discussion to Dr. Hare, I will only speak of one point.

The use in influenza of hynotics, narcotics, sedatives, and motor depressants is a question of particular interest in connection with the study of the nervous and mental phenomena of the disorder. The views of practitioners and writers are here decidedly at variance. Serious mental and nervous complication or actual insanities occurring during influenza have been attributed to the too free use of such chemically powerful remedies, as phenacetin, antipyrin, antifebrin, chloral, bromides, sulfonal, and paraldehyde; and our older narcotics such as opium, hyoscyamus, conium, and cannabis indica, have also come in for a share of blame. Persisting conditions of nervous prostration, and chronic respiratory and cardiac neuroses, have also been charged to drugs. Undoubtedly such criticisms have some foundation, but it remains true that each of the remedies named has proved itself of some value in the treatment of influenza, and particularly of its nervous types. The enormous consumption of a drug like antipyrin is a practical argument both for and against its use. What Grasset has said of this remedy might with almost equal truth be said of almost any of the rest. "This agent," he says, "vaunted by some as a panacea against all manifestations of the disease, is considered by others a remedy absurd and irrational in all cases. The truth would seem to reside between these two extreme opinions."

DENTAL EDUCATION. A FEW SUGGESTIONS AS TO NEEDED IMPROVEMENTS.

Read before the Chicago Dental Club, December 28, 1891.

BY JOHN S. MARSHALL, M.D.,
OF CHICAGO, ILL.

Mr. President and Gentlemen of the Club:

The question which has been chosen as the topic for discussion this evening is, to my mind, one of great interest and of vital importance to the future of dentistry.

The facilities for general education provided by a State or a Nation, indicate the degree of its intelligence and civilization. Education and civilization go hand in hand, while error and superstition are driven into oblivion before the light of truth and knowledge. As there can be no question of greater importance to a State than the education of its people, so there can be no question of graver moment to a profession, than the education of the young men who are to enter its ranks.

This is an age of progression; an age of intense earnestness; an age of high ideals. In every department of life this is made manifest. From the most humble callings to the most exalted of the professions, we recognize an intense desire for improvement. It permeates every avenue of human existence, and influences our physical conditions, our social surroundings and our mental culture.

In educational matters there is the greatest activity. Every department of learning is advancing to higher ground. New methods of teaching are being introduced. Obsolete and cumbersome systems are being discarded, and a disposition is manifested to "prove all things, and hold *fast* that which is good."

> "Thus times do shift; each thing his turn does hold;
> New things succeed, as former things grow old."

Great universities are also being founded, and those now in existence are enlarging and organizing new departments, for the express purpose of furnishing more extensive facilities for higher and post-graduate education in literature, in the arts and the sciences. In this, the promotors are simply meeting the popular demand for higher learning.

The learned professions—so-called—are demanding higher attainments of those who desire to enter their ranks. This is particularly true of divinity, of law and of medicine.

In all of these departments of learning, the preliminary qualifications for entrance into their schools are being placed upon a higher plane, but in none has greater advancement been made in this respect than in medicine. With all this, however, the number of young men applying for admission to the medical colleges, who have received a collegiate training, is nevertheless increasing every year. In the dental departments of some of our universities, a noticeable improvement has also taken place in this respect. In a few of them, the entrance examinations have been made the same as for medical students, while the number applying for admission who are exempt from entrance examinations by virtue of possessing certificates of higher qualifications, is gradually but surely increasing.

The young men of character are seeking a broader culture and a deeper scientific knowledge, before entering upon their professional studies, and as a result, they are in reality forcing the colleges to raise the standard of preliminary requirements, and to do more thorough and scientific work.

Most of the dental colleges, however, are not doing their duty in this matter; the ambition for large classes and a handsome financial balance at the end of the year prevents them from taking the high position which it is their privilege to occupy, and they are content to be governed by this lower motive, rather than the higher one of educational advancement.

America has heretofore been the educational centre of dentistry for the whole civilized world, but it will soon lose its prestige, unless a decided advance is made upon the present requirements and methods of teaching, generally pursued in a majority of our colleges.

The English, French and German schools are ambitious to be leaders, and unless our institutions take a more advanced position, they will soon find themselves outstripped and dropping towards the rear in this onward march of progress. There is already a perceptible falling off in the number of foreign students attending the American dental colleges.

Let us, for a moment, review the history of our profession. Sixty years ago, dentistry was nothing more than a trade, and practiced principally by barbers and blacksmiths. It could make no pretense to being a learned profession, for it had no schools, no literature worthy of the name, and no societies. In its ranks could be found only a very few men of learning; but these few, like the little leaven in the barrel of meal, "leavened the whole lump."

To the faith and efforts of those noble men, Bond, Harris, Hayden, Parmlee, Wescott, Maynard, Harwood, Tucker, Keep, we owe our present advantages;

our colleges, our periodical literature, our text-books and our societies. Do we realize what they sacrificed, in time, in money and in health, that we, their professional children, might have all these advantages, and that through them, suffering humanity might be blessed?

Were they living to-day, we feel quite sure they would labor even more earnestly, and make even greater sacrifices than of yore, to keep the profession which they loved so dearly, well in the fore-front of human progress. They would not willingly rest upon the laurels already won, but would press forward and upward; while upon their banner would be inscribed

"The strange device, 'Excelsior.'"

Is it not our duty, then—if we would be worthy such a parentage—to make every effort in our power to still further advance the educational interests of our chosen profession? Could we offer a more beautiful or noble tribute of our appreciation of their sacrifices and labors?

Comparing the status of dentistry of those times with that of to-day, we recognize a very great advancement, but all departments of scientific learning have made progress equally great.

Our system of dental education is still capable of much improvement. Your attention, therefore, is solicited to the consideration of a few of the most important changes that seem to us much needed at the present time, to keep our colleges in the fore-front of educational advancement.

First: The qualifications for admission should be raised to a higher standard.

Nothing less than a high school education should be accepted as a qualification for admission. Most of the dental schools claim to require a grammar school education as a prerequisite to matriculation; but we are all well aware of the fact that this is not insisted upon in very many of the colleges, and young men are graduated every year who have not a sufficient knowledge of their native language to write a grammatical sentence, or correctly spell many of the words contained in it. This is all wrong, and a reproach upon the good name of American dentistry.

Some of the better class of the colleges have claimed they were not supported in their efforts to raise the standard of preliminary requirements: that while they were willing to admit the requirements were low, they were nevertheless too high for many of the students sent to them. The fault in this regard lies partly with the profession, by encouraging young men to attempt the study of subjects for which they are totally unfitted by reason of their ignorance. But this does not exonerate the colleges. Such students are hampered and handicapped all through their college course, and are usually of little account in after professional life.

Let us rather encourage and stimulate, as far as we may, every young man who contemplates the study of dentistry, to take a full course of college training in the sciences before taking up professional study. In this way and this way only, can we hope to make dentistry one of the highest of scientific callings.

Second: The course of study in the fundamental sciences of medicine should be broadened and the whole course of instruction more systematically graded.

It should be so arranged that the student will advance, by natural steps, through the entire course. Beginning with the foundation studies of anatomy, histology, chemistry, and physiology, and advancing from these to the study of pathology, materia medica and therapeutics, and finally to the application of remedies and surgical operations for the cure of disease and the restoration of lost parts by mechanical and other means. Little or no attention has been paid to this subject by the majority of the dental colleges and until recently, with few exceptions, a strict division of the students into separate classes has not been attempted, but, all were ground through the entire course of study, juniors and seniors together "in a hit or miss," "go as you please" sort of fashion, that, to say the least, has not been conducive to the best education of the young men committed to their charge. In every other department of learning, except medicine and dentistry, from the primary school to the university, the graded system is the only one in use. Experience has taught that by this system, *which is the natural one, the student is not* overwhelmed with a heterogeneous mass of knowledge, much of it beyond his comprehension, but, on the other hand, he is led step by step from the simple to the complex, from a study of the normal structure and functions of the human organism to the recognition of disease and its causes and the means to be applied for its prevention and cure.

Third: The substitution of the recitation plan of instruction for the old lecture system would in many departments be of very great advantage to the student.

By following a certain text book and requiring the substance of a given number of pages as a lesson, to be thoroughly learned, and recited each day, the student makes better progress than by listening to lectures and attempting to take notes. This is not simply our own opinion formed from student life and years of professional teaching; but is the conviction of several gentlemen eminently qualified by many years of experience as teachers in professional schools. The teacher, however, should not confine himself at the recitation to the text of the lesson; but he should be given full liberty and expected to explain and elucidate each subject to the best of his ability.

Another advantage to be gained by this method is a closer personal contact between the teacher and the student. This advantage cannot be over-estimated. To do the best work for the individual student, the teacher must know the disposition and capabilities of each member of his class. All cannot be taught by precisely the same methods; some can be led; others must be driven; some need encouragement, others must be held back; but by adapting his teaching to the individual requirements he creates enthusiasm in his work, a knowledge of the subject is gained and thus he accomplishes the desired end.

Fourth: Each class could, with advantage, be divided into small sections for laboratory and clinical instruction.

A competent demonstrator or clinician should be placed in charge of each section; and it should be his duty to guide the hand and the eye of the students in the practical manipulations of the laboratory and operating rooms rather than to do the work himself or leave the student to discover (?) after repeated failure and discouragement, a method of his own. The finest operators in surgery and dentistry can be, and have been made by this individual method of teaching.

Fifth: There is imperative necessity for a longer course of professional study.

The time has recently been extended to three years of college instruction of five months in each year; while a few colleges have extended the yearly sessions to six, seven and even nine months. This is a very gratifying advance, but it falls far short of what is really required. Dentistry in its highest sense is a department of medicine and should be studied as such! To acquire a good knowledge of the fundamental sciences of medicine, and the special manipulative training necessary to make a good dentist, in the time demanded by a majority of the dental colleges is simply an impossibility; only a mere smattering knowledge of the subjects named in the curriculum can by any possibility be attained.

Four years of college instruction of at least nine months in each year, is none too much time to be spent in the acquirement of a good dental education.

The blacksmiths, the carpenters, the brick masons and other skilled trades, require of their apprentices that they serve from three to four years of twelve months in each year before they are considered capable of filling the position of journeymen. And yet nearly all of the medical and dental colleges pretend to educate (?) young men for the duties of a learned profession, and, by virtue of their diplomas, place in their hands the issues of life and death after a course of study extending over less than half the time required to learn one of the ordinary mechanical trades.

"'Tis true, 'tis pity; and pity 'tis, 'tis true."

Sixth: The standard of final examinations should be raised and made more uniform.

We notice a very great diversity in the requirements at the final examinations. Some of the colleges require their students to obtain seventy per cent. (70%) on a general average; others demand only fifty per cent. (50%); while in still others the final examinations are merely a farce, all students being graduated except those who have not paid their fees.

In a few of the colleges the examinations are conducted in writing and orally; in others the written examination only is used, while in still others it is entirely oral.

The final examination is the last barrier between the student and his right to practice. The gate through which he passes should be guarded well and the axe fall upon the incompetent and immoral with unerring certainty.

The student, however, should be given every opportunity to prove his fitness for graduation; hence the examinations should be both written and oral, as by this method any attempt at cheating is discovered and every student is given a fair chance.

The character and the standing of the student only, should govern the action of those who pass upon his qualifications of fitness to practice. It would be far better for the public and profession, however, if the power to grant diplomas was vested in the State rather than in the teaching institutions. Sentiment or greed often enters into the case as it now stands, and many young men are graduated who are totally unfit to enter the ranks of a liberal profession.

Other suggestions might be made looking towards a farther elevation of the standard of dental education, but those already enumerated seem to be the most needed improvements at the present time.

Is this asking too much? Are these changes feasible? To the first we answer "No!" To the latter we say emphatically "Yes!" The colleges that would place themselves in this advanced position, might at first find their classes lessened in numbers, but what would be lost in this respect would be more than made up to them in the quality of their students and in reputation; and after a few years they would find that on the whole they had lost nothing financially and had gained immensely in reputation. An example in proof of this statement could be easily furnished, but we forbear for fear the comparison might be considered invidious.

Had we the gift of prophecy we might suggest; the time is not far distant, yes, some even in this presence may live to see, a much greater advancement in dental education than that just outlined.

We believe a collegiate training in the sciences and a complete medical education will sooner or later be required as a prerequisite to entrance upon special training for the practice of dentistry. Then the dental college will become what it ought to be, a *dental hospital*, devoted entirely to special teaching in this department. We are aware that to some this will seem to be an Utopian idea, but if we read the trend of the times correctly, it will be realized much sooner than we expect, for,

> "Often do the spirits
> Of great events stride on before the events,
> And in to-day already walks tomorrow."

A SKETCH OF MR. LAWSON TAIT AND HIS WORK.

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OF CHICAGO, ILL.,
PROFESSOR OF GYNECOLOGY IN CHICAGO POST-GRADUATE MEDICAL SCHOOL.

(Concluded from page 103.)

Mr. Tait employs a lady superintendent in his hospital who supervises in general and relieves him from its care. His hospital is the outcome of many years of discipline. I am very much impressed with one idea in Mr. Tait, and that is, he avails himself of the value of *paid labor*. He has the capacity to make paid labor serviceable. Though he conducts this hospital with some twenty-five servants under his pay, yet the labor of these servants is made valuable, and he finds much time to do his own special work, contribute valuable articles to journals, make original addresses at great medical gatherings, and do extensive reading. Paid labor relieves him from preparation of patient or instruments. It takes away the anxious care of after-treatment. He keeps a secretary, who does his correspondence with a typewriter. When Mr. Tait wishes to write an article or a letter, he simply talks it off to his secretary, and she takes it down in short-hand and then sends it to him afterward in type-writing for his corrections. This saves much valuable time.

Mr. Tait has performed nearly 2,800 abdominal sections. This is, so far as I know, the largest number done by any one man. He has published some very good views on traumatic hæmatocele, or hæmatocele following operations. They occur from operations on the broad ligament. They often retard recovery. I think I saw about fifteen hæmatoceles during the course; some four of these suppurated. Dr. Martin opened and drained three through the abdominal wall, and Mr. Tait opened one through the vagina. One Dr. Martin aspirated. Many of these extra-peritoneal hæmatoceles arise after operations, but give no particular disturbance. It would appear they arise in some 12 per cent. of operations.

Mr. Tait's medical assistant for the past two years has been Dr. Christopher Martin. He is a man of 25, of scholarly attainments, and a very courteous and kind gentleman. The University of Edinburgh, where he graduated, showered a goodly number of honors on him. He attends to the after-treatment for Mr. Tait, and is becoming an expert in it. He does considerable minor gynecological work, and not infrequently abdominal section. We would be pleased to see a monograph from Dr. Martin on the after-treatment of abdominal section, as he has given after-treatment to over 400 cases.

Mr. Tait has contributed largely to our knowledge of axial rotation of tumors. Ovarian and other tumors will often twist around on their pedicle until the returning and even the entering stream of blood will be cut off. He remarked at one of his operations of rotated tumor that he had seen sixty-one or sixty-two of those cases. They had all rotated from before backward and to the right except two. The theory is that the emptying and filling of the rectum is the chief cause. If the tumor be on the right side and especially influenced by the ascending colon, it might rotate exactly opposite. After the pedicle of the tumor is strangulated its nourishment must come from its walls. I have seen several of these rotated tumors, but four of the most typical ones I ever saw were with Mr. Tait. One as large at a man's head had been entirely strangulated on its style. When he removed it there was the most beautiful display of new-formed tissue all around its side, between its walls and the abdominal walls. He shelled the tumor out of this delicate new-formed tissue. He has demonstrated that if a woman is known to have a tumor, and it suddenly increases in size in a couple of days or less, it points suspiciously to axial rotation. I saw one of his cases in which the tumor was rotated at labor. The tumor may go on rotating and *very gradually* strangulate the pedicle. Within the past eight months he diagnosed and successfully removed a strangulated ovarian tumor from a lady over *70 years old*, in Italy.

It was simply prompt surgical action that saved the old lady. I saw the most skilful of surgeons lose a case of rotated tumor by simply putting off the operation until too late.

Mr. Tait gives a gynecological course to four medical men. The course lasts six months, and the fee for this six months' course is one hundred guineas ($525). Only four doctors are allowed in the course at one time, but a pupil can begin his course at any time there is a vacancy. For this course he has more applicants than he can accommodate.

In this course one may learn very much of the capacity of the peritoneum to resist disease and bear manipulation. In short, homely language, one can learn what the belly will stand. Any man who intends to follow abdominal work during life will never *regret the time and expense required to pursue* a course with Mr. Tait.

In operating, Mr. Tait does not follow the rules of the books very close, but often follows his own peculiar methods. I will illustrate this by a case of supra-pubic cystotomy at which I assisted him. The man was given no preparation. He weighed probably 275 pounds; his pubes were not shaved; his bladder was not filled with water; his rectum was not filled with air or water. Mr. Tait simply cut down to the bladder and then into it, with no sound in it for direction. With forceps he drew out a stone weighing nearly two ounces. He then sewed the edge of the bladder to the abdominal wound and put in a glass drain tube. Both ends of the incision in the abdomen were closed up to the drain tube. The man made a good recovery. He was about 62 years old, and his abdominal walls were between four and five inches thick with fat.

I have never seen Mr. Tait remove the uterus for malignant disease, and I understand he is opposed to the operation. He talks against any particular operation or interference with cervical lacerations, and claims the trouble does not lie in the lacerated cervix, but generally in the endometrium or metrium. In other words, he considers Emmet's operation of but little value.

His internal therapeutics are very limited. Iron, ergot, and the salts of potassium, he employs very much. He has unbounded faith that the salts of potassium, *e.g.*, $KClO_3$, will reduce a uterus suffering from subinvolution: or, as he terms it, "the hospital uterus."

Mr. Tait seems to believe in a distinct relation of insanity to pelvic disease. I have seen him operate in cases of severe mental disturbances at menstrual periods, and though such cases are better, they are too recent to say anything about. His writings show some good results in operative work, and I have heard him relate cases which showed excellent improvements. So far as I could observe, he would not generally operate in such cases, without entrenching himself by the distinct agreement of the attending physician, or such other agreements as were fully satisfactory to the concerned parties, that an operation was imperative.

Mr. Tait is a Fellow of the Royal College of Surgeons of Edinburgh and of England. M.D. was conferred on him by a medical college in New York, by one at Albany and by one at St. Louis. He is an honorary member of so many societies that it would be tedious to mention them. He is professor of gynecology at Queen's College at Birmingham, and President of Mason's College. He was President of the British Gynecological Association in 1886. Several years ago two men were to be knighted in Birmingham. One was Dr. James Sawyer, and the other was Mr. Lawson Tait. The former gentleman accepted the honor, and is now Sir James Sawyer. But Mr. Tait refused the honor of knighthood, and the world knows him by the simple, untitled, but well recognized name of Lawson Tait, around which he has built more enduring monuments for mankind than all the titles monarchs could confer.

Mr Tait was awarded the Cullen Triennial Prize by the unanimous vote of the College of Physicians and of the College of Surgeons of Edinburgh. This was awarded for the progress he made in work on the gall-bladder. The prize consists of a silver bowl, made by a silversmith in London in the seventeenth century. It would hold 4 to 6 quarts. The inside is lined with gold. At present it stands in a glass case in the art gallery of Birmingham. The bowl itself is a beautiful piece of art.

Mr. Tait has always taken an active interest in the public and municipal life of the city of Birmingham. He was for years member of the City Council. He was member and chairman of the Board of Health for some years. For ten years he was member of the Asylum Committee.

Mr. Tait is a firm believer in Home Rule. He has paid some attention to politics, and in 1886 was a candidate for member of Parliament, but was defeated. His defeat was no doubt due to the fact that his practice employs so much of his time that he has none to spend in other directions. Mr. Tait is a very vigorous man in whatever cause he espouses, and when he talks politics he excites sufficient opposition to get, occasionally, a cartoon in some of the English papers. No one has any difficulty in recognizing that the cartoon refers to Mr. Tait. From his abilities and widespread reputation, Mr. Tait is becoming a well-known figure in England. He has some reputation as a detective, and is occasionally interviewed to secure his opinion in noted criminal cases, as the Whitechapel murders. The following story, which Dr. Littlejohn, of Edinburgh, relates to his students, will illustrate some of Mr. Tait's characteristic methods of investigation. In this case, no doubt, Mr. Tait saved a man from execution. Two men of drinking habits occupied the same room in Edinburgh. One day the men had a little quarrel, and the next morning one of them was found dead out on the streets, with his skull fractured. The police found the other man asleep in his bed, the door locked, the room bespattered with blood, and a window in the room open. Of course, the man in bed wss accused of the murder, but he stoutly denied it. But the evidence appeared against him, especially as the two men had quarreled the day before. Dr. Littlejohn was health officer of Edinburgh, and enjoyed a wide reputation as a clever man and shrewd detective. Accidentally, Mr. Tait visited Edinburgh at this time, and Dr. Littlejohn said, "Mr. Tait, you are just the man we want to see; we have a puzzling case, and maybe you can help us out." So Mr. Tait carefully examined the room and its bloody furniture. The beds in the room were placed against the wall, one above the other, like the bunks on a ship. He noticed that just above where the dead man had slept, the wall was spattered with a spray of blood. He traced the walls around the room to the open window, and observed that all the way along the wall was spattered with fine drops of blood, as if it had been blown on to the wall. The blood was on the wall in fine points. Mr. Tait knew nothing of the case. He had not seen the dead body, but he came back from the open window, and said that the man in bed was innocent of murder. This was received with incredulity. Mr. Tait's explanation was that the dead man had a polypus in his nose, and that during the night it had started to bleed, choking him, and in his half drunken sleep, the man blew his nose every little while, bespattering the walls with blood. He followed the wall around to the window, and then fell out of it, and so fractured his skull. Dr. Littlejohn went and examined the dead man's body, and found a polypus, with the clotted strings of blood hanging from it, in the dead man's nose.

Mr. Tait is an advocate of a liberal public policy in regard to State and individual. He holds advanced views on woman's rights, that the professions and education should be free to all, regardless of sex. But he claims that the extremely high education of woman, and her special attainments in the sciences, are gained by the individual at the expense of the race. Brainy and scholarly women, who are specially skilled in science or the professions, are those who do not have children. They leave the production of children to their sisters who have inferior brains. And brain on the part of mothers is what the race particularly needs. Hence, the race is not specially benefited by the cultivation of any art or science among women which entices the superior brains to avoid maternity.

Mr. Tait, like many other Britians of means, possesses a country seat. This is a beautiful home in the New Forest, about eight miles from Southampton. Mr. Tait is enlarging and beautifying this valuable estate. The interesting affair about the house on the estate is the rare and quaint collections found in it. As Mr. Tait remarked to me that when I got into his country seat I would be living in the sixteenth century. The ceiling covering the reception room is made from the timber taken from the room in which Catherine of Aragon was married to Arthur, Prince of Wales. Quaint old bureaus, carved chests and ancient looking chairs are found in all the rooms. Pictures, and casts, and busts, and horns, and old relics of every description may be seen through the house. Hosts of old dishes, porcelaine, rare china ware and many remnants of firearms can be seen. Relics from the days of chivalry and the tournament are not few. It is a model house, richly furnished. He keeps quite a number of servants to cultivate and improve the estate, which is adorned with fountains, conservatories, hot houses, orchards, lawns, well ordered gardens and walks. There is a little brook that runs through the land, and on one side is a strip of forest, which adds much to the beauty of the grounds.

Mr. Tait has a very fine yacht on which his family and friends make various short excursions during the summer. He seems to take much pleasure in short excusions of a day or more. He is quite familiar with the country, its history and its relics. He is fond of studying architecture, and in short journeys I have listened with interest to his views of church architecture. He notes that the old churches of England are all built at certain definite angles which refers back to the old sun worship. The churches are built to certain saints, and the angle of the church will correspond to the distinct position of the sun at certain periods of the year. He is fond of good paintings, and his criticisms and remarks on pictures are well worth hearing.

Personally, Mr. Tait is a short, stout man, weighing about 200 pounds. He has a large head covered with dark iron gray hair. He wears only small side whiskers. He speaks moderately quick, and thinks very rapidly. In operating, when complications arise he makes quick decisions and then quickly executes them without hesitation. He is very reticent and quiet while at work, but when not engaged, is often talkative and enjoys a well told story. He has a large fund of humorous and witty stories, which he can relate in the most pointed style. He is a good entertainer at dinners. Whenever he talks his remarks on any subject command attention. In general, Mr. Tait is a quiet man, and often one can see him for a long time engaged in his own thoughts. He is an inveterate reader and reads in his carriage and on trains. He is fond of good theatres and frequently attends them. I have heard him speak of Shakespeare as one of the greatest authors that ever lived. That in Shakespeare was found the very heighth and depth of human thought. Yet he does not believe that Shakespeare, whose home was thirty miles from Mr. Tait's, at Stratford-on-Avon, wrote the great historical plays which bear his name. He thinks that some greater mental force than Shakespeare of Stratford-on-Avon, must have produced the profound thoughts in those great plays. His idea is that Bacon contributed largely to them. In the opinion that some great intellectual force besides "Willy" Shakespeare contributed to those plays the greatest mine of thought, Mr. Tait is not alone. But one of the attractive things about Mr. Tait is the trenchent and original way in which he grasps essentials and uses them in what seems the most natural way. At eighteen Shakespeare left Stratford-on-Avon unable to write his own name. At about forty-eight he returned to live at Stratford-on-Avon, and it is quite authoritative that the rest of his life was very dissipated. Is it natural that such a man could utter all the great thoughts and little thoughts that the human race know of? The essence of law, theology, and medicine are spoken of with the ease of ordinary conversation. Philosophy with every shade of thought and feeling is noted. There are no traditions of wise sayings attributed to Shakespeare about his home. The human race know few thoughts of life left unuttered by Shakespeare. Surely, an uneducated man could not have said them. No doubt "Willy Shakespeare" wrote the lower plays of grosser thoughts and blunter morals.

Mr. Tait lives in a retired part of the city close to his private hospital. He spends much time in traveling to operate in different parts of Great Britian and other countries. He was a great admirer of the celebrated surgeon, Syme, and even to-day he uses little short-bladed knives, and drives heavy gray horses, just as that noted operator did. Mr. Tait's heavy gray span with their vigorous action, are well recognized in Birmingham. He has excellent business capacity, and has superior powers in organizing and conducting plans. He has a genius in doing the right thing at the right time, and in the right way. For example, when he came to Birmingham over twenty years ago, he insisted on practicing his specialty and nothing else. Some of his friends said it was foolish to turn away work because it was not gynecology or abdominal sections, but Mr. Tait said "it was casting bread upon the waters." Doctors have told me that he refused good paying cases because they were not in his field. To-day Mr. Tait has one of the most lucrative practices in England with an increasing reputation. He upholds the dignity of the profession by charging liberal fees, and yet he does an enormous amount of skilful work for the poor. He has a keen memory of past experiences, and recalls with vivid distinctness, past cases. He makes up his mind on subjects and announces it and will tenaciously defend his views. Those familiar with him and his writings are quite aware that he is apt in natural explanation of phenomena and to expose the truth of matters complicated. The very simplicity of his work is what confounds. His whole operative procedures smack of simplicity. His perineal operation is the best and most useful example. He is a very interesting companion to travel with, as he entertains very clear views of events and phenomena.

In conclusion, I have to thank, for well remembered kindness in making my sojourn in Birmingham pleasant, Mr. and Mrs. Tait, Dr. Christopher Martin, the lady superintendent and nurses of the hospital. May their coming days be happy and their nights of slumber full of splendid dreams.

No. 999 West Madison Street.

SOCIETY PROCEEDINGS.

The Southern Surgical and Gynecological Association.

DISCUSSION ON ALBUMINURIA AND ITS RELATION TO SURGICAL OPERATIONS, WITH REMARKS ON THE RELATIVE MERITS OF ETHER AND CHLOROFORM.[1]

Dr. William Warren Potter, of Buffalo: The experience of surgeons in the use of anæsthetics is one of the most important phases of the subject that can be presented for discussion. It is an all-absorbing question, one which lies at the threshold of all operations, but on this occasion I shall only attempt to accentuate one or two points.

It has fallen to my lot to have considerable experience with the administration of both ether and chloroform for surgical and obstetrical purposes, and this personal experience, together with such re-inforcement as it has obtained from the opinions of others, has led me to the conclusion that, in healthy patients, those in whom we are quite sure there is no heart lesion, and where we have the assistance of a skilful anæsthetizer, the surgeon may rest quite easy in the use of chloroform.

I remember gathering much experience in the use of this anæsthetic during my military service. It is quite within the limits of truth for me to assert that I have administered chloroform more than three thousand times. I have been present during its administration at least as many more times, and I have never witnessed a death or personally known one to occur from its use.

I recall the fact that some years ago a statistic was put forth, though I cannot say by whom, tending to show that the ratio of deaths between chloroform and ether was as one to three thousand for the former, and one to ninety thousand for the latter. Of course, even admitting this to have had an approximation of truth in it at the time it was announced, all this is changed at the present day.

I find that it is quite common among my surgical friends to employ ether during their operations rather than chloroform, for the reason that in case of the death of a patient from the former they would find it easier to justify themselves in the minds of their neighbors and friends, than if chloroform was used. Nearly every one whom I have heard express himself has a preference for chloroform, but feel that they are not justified in using it in civil practice at the present time.

One of the particular points that I wish to emphasize is in regard to the duty of the anæsthetist at an operation. I feel warranted in asserting that no surgeon can afford to undertake an operation, which requires an anæsthetic, without obtaining the services of a most experienced and capable man, an expert in the administration of anæsthetics. It has been a matter of frequent observation on my part, and I have no doubt many of the gentlemen present have observed the same thing, that very frequently a physician casually present at an operation is asked on the spur of the moment to administer the anæsthetic. Now, such a physician may be a very accomplished man in so far as the ordinary practice of medicine is concerned; he may know ever so well how to treat pneumonia, and typhoid fever, much better, generally speaking, than the operating surgeon himself; moreover, he may be a very competent surgeon with reference to the care of minor surgical cases, and perhaps skilful in the treatment of fractures and dislocations, but know very little about the proper administration of an anæsthetic. I lay great stress upon the employment of an expert anæsthetist in surgical operations, particularly, where the administration must be prolonged, or the patient profoundly narcotized.

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[1] For abstract of paper see THE JOURNAL for Nov. 28, 1891, p. 851. The discussion not being received until this week, and not elsewhere published.

It is a well known fact that the skilful anæsthetist will administer only a minimum of the anæsthetic. He will not saturate the patient, the atmosphere of the operating room, and everybody and everything connected with the operation with the anæsthetic; whereas the less experienced amateur anæsthetist will be almost sure to use several times the amount required. And this, to my mind, is a very important question in reference to the subject under discussion, one that has great weight with reference to lesions of the kidney. A general rule to be kept in mind is: when chloroform is administered, watch the heart; when ether is administered, watch the respiration. The surgeon himself should be relieved of this watchful care, and give his whole mind to the operation, hence the anæsthetist should be experienced in detecting the first warning of danger, which is oftentimes lost sight of. If the halcyon moment, when danger can be averted, is seized upon, a life may be saved that would otherwise be doomed.

Dr. Long seems to be of the opinion that an anæsthetic has very little effect upon a healthy kidney, or even upon a kidney with only slight lesion. Probably this, as a general observation, may be accepted as correct, but there are so many exceptions to it that it is never safe to administer any anæsthetic for a longer period than is absolutely necessary, or to use more than is consistent with the most conservative and economic regard for life. I have no doubt that a kidney with even a slight lesion may withstand the administration of an anæsthetic given by a careful and experienced man, and come out of the ordeal unscathed; whereas from the same kidney, under the mal-administration of an anæsthetic, may develop serious and possibly fatal results.

The purpose of my remarks has been to emphasize the one general idea with reference to surgical operations, namely, that always an experienced anæsthetist should be employed, one who has had a knowledge of the condition of the kidneys of the patient who is to be anæsthetized, as well as of the heart, and who is familiar with the dangers to be avoided on the one, as well as on the other hand, one who will shun Scylla and Charybdis alike; the mortality from the use of anæsthetics under such precautions will be reduced to a minimum so far as human judgment can so reduce it.

Dr. Geo. A. Baxter, of Chattanooga: It strikes me in the class of surgery that I deal with, mostly from machinery, heavy railroad car wheels, where intense shock is existing and continuing for some time, that it would be a very difficult matter indeed to determine the exact effect produced by the anæsthetic so far as the kidneys were concerned. I have repeatedly seen more or less suppression of urine where no anæsthetic was given during the prevalence of shock, and I have usually attributed that condition to shock rather than to the anæsthetic. It seems to me in the consideration of this question the condition of shock must be taken into account, and time and again in severe operations, you will have to draw the urine or make an attempt to draw it, and find but a small quantity there. In one recent case that I recall to mind just now, an amputation at the thigh from railroad injury, I do not believe there were two teaspoonfuls of urine passed. Now, that condition I do not believe, was due to the anæsthetic, and it was chloroform that was given.

I am free to say, following the doctor's advice, that I have a careful assistant who administers the anæsthetic, and it is not once in ten times in that class of surgery (railroad surgery) that I use ether at all, and only during the progress of the anæsthetic when I find difficulty do I resort to ether then as a stimulant.

Dr. John D. S. Davis, of Birmingham, Alabama: I hardly think the cases of animal experimentation mentioned would be a guide in the administration of ether, as in all cases the anæsthetic was pushed until death ensued. I use chloroform most frequently, and believe in the great majority of cases that it is the proper anæsthetic to use, but a great deal depends upon who uses it. There is great danger in having an inexperienced man to administer anæsthetics. When we go to operate we should always have with us an experienced assistant, and I never allow anybody who is not in the habit of administering anæsthetics to do this work.

As to the albumin in the urine, I believe in most cases that operations lessen the quantity and the strain on the kidney, whether the microscope reveals anything more than albumin or not. In urethral and bladder troubles I operate and pay no attention to it.

As to irritation in the bladder, I have always found that the sooner you relieve it and establish drainage the sooner you relieve the strain upon the kidney, and the better the result, whatever the irritation may be, or whatever the test may reveal in the urine. And I apply the same rule in much of my abdominal and pelvic work. Remove pressure to abdominal viscera and the kidneys will seldom be injured.

Dr. Hunter McGuire, of Richmond, Va.: I do not think we can discuss a more important subject than the one Dr. Long has given us; but I do not think he has shown that chloroform produces albuminuria. I was taught thirty years ago that albuminuria frequently followed a surgical operation, no matter whether chloroform, ether or no anæsthetic was given. I know that without anæsthesia albuminuria follows surgical operations in a very large number of cases. In the first case he gave us, there was albuminuria following the introduction of the catheter. It is much more likely that the catheter did the mischief than the chloroform. I know that I am within bounds when I say I have given chloroform 12,000 times. I give ether too. I think every good surgeon should select his cases. No one has a right dogmatically to give one or the other of these anæsthetics. But I arise more particularly to answer Dr. Potter. He says statistics show that chloroform kills one in three thousand; ether one in ninety thousand. I merely want to state that there are no facts or statistics to justify such an assertion in all of the cases in which it is given. We have no data or figures by which we can make such statements as to the number of deaths from chloroform and ether, and the number of times each anæsthetic has been given. So far as I am personally concerned, I think chloroform is safe, as a rule, but we should select our cases. I venture to predict that when the experience of the civilized world is collected and analyzed, it will be found, if indeed it is possible to definitely settle such a question, that in certain cases ether should be given, and in certain other cases chloroform employed, and that every good surgeon will be expected to exercise discrimination in the selection of his anæsthetic. For myself, I am wedded to neither one nor of these agents. In general terms, in feeble, very anæmic people, or those suffering from the prostration of shock, or loss of blood, I prefer ether; in either the young or the old, or in cases when cardiac, renal or pulmonary trouble is suspected, as a rule, I think chloroform is safer. Accidents occasionally follow the administration of both ether and chloroform, this, too, in the hands of competent and most skilful men. Already between four and five hundred deaths from chloroform have been reported, and nearly, if not quite, two hundred deaths from ether. What the ratio of either of the agents is to the number of inhalations, we are so far unable to determine. That both agents sometimes kill the patient, the most bigoted and partisan advocate of either ether or chloroform must admit. But which one of the anæsthetics is more dangerous and apt to kill is the paramount but undetermined question. Safety of the patient is the important point, before which all else should yield: compared to that, inconvenience. comfort, time, money and everything else are as nothing.

Dr. Willis F. Westmoreland, of Atlanta, Ga.: I desire to make a few remarks on this very interesting subject—first in reference to albumin, and how it is found. I think it is due to some bladder trouble, whether there is any deposit of mucus or pus that will give you a reaction of albumin, outside of any pathological change in the kidney. I do not believe in splitting hairs on a subject of this kind. I think, theoretically, we split hairs; and that, practically, we do not pay enough attention to it. That is where the trouble lies. We draw conclusions when we make the operation; nine times out of ten we never examine the urine previously, unless there is something in the history that calls our attention to albumin.

Another point that I desire to call attention to is this, that I do not think the presence of albumin amounts to anything unless you make a microscopical examination, and then, if you should find a quantity of kidney cells or tube casts, I do not think the use of either chloroform or ether is contraindicated, because unless you find one of these two conditions, you have got little or no pathological change in the kidney, as a rule. Albumin may be present from the start. It may be traced to albuminous food of some kind, or it may be present from some reflex action, that is absolutely no contraindication to an operation. I am free to confess, it is in very few cases that I examine the urine, unless there is something in the peculiar aspect of the patient that directs my attention to it. Unless I find some pathological change by microscopical examination, I go ahead and do the operation. I do not include emergency cases at all, for we all know when life is at stake, no matter what the condition is, we operate. All of these cases can be ruled out.

With regard to anæsthetics, the surgeon should use that anæsthetic with which he is the most familiar, and accustomed to giving. If he is accustomed to administering chloroform, he should continue to use it in his practice and not change to another, unless there are idiosyncrasies or facts in the case that would lead him to do otherwise.

During the last six years, I have had two experienced men to give anæsthetics for me. If one cannot accompany me, the other usually does, and when I go into the country to operate, one of them goes along with me. Take some man that is unaccustomed to administering anæsthetics, he is frightened at the least little thing, and he will worry you to death almost, with his continually feeling around for the pulse. He has a scared expression, and nine times out of ten the surgeon is in no humor to operate with such an inexperienced anæsthetist. I make it a rule to take an experienced anæsthetizer along with me, and charge the expense to the patient.

Dr. Cornelius Kollock, Cheraw, S. C.: I agree fully with Dr. McGuire, that no man should be dogmatic in his opinion with regard to the use of anæsthetics. I have been inclined to use chloroform more than ether. I have used chloroform two thousand times or more, without a death. I have used ether about two hundred times, and have had two deaths. I recall one case I lost, where its use was objected to. It was a case on which I operated for the removal of an ovarian cyst. The family physician whose patient it was, was a near relative. He insisted upon using ether. I asked him whether everything was all right as far as renal lesions were concerned, and he assured me it was. He gave ether. The operation was completed in less than forty minutes, but for the first thirty or more hours after the operation, the patient passed less than 3 ozs. of urine. The other case was that of an old lady, 68 years of age. She died. She was in such a condition that she would have died whether she had taken ether or not. I think, if chloroform is not watched closely, there is more danger attending its administration than ether properly given. There is more danger in giving morphine than laudanum, but who hesitates to give it? We must exercise more caution in the use of these anæsthetics, and give the one the case indicates or calls for. Prejudice should exert no influence in the selection of an anæsthetic, or in the administration of any remedial agent, as too often happens.

Dr. Joseph Price, Philadelphia: Drs. Davis and Westmoreland have called our attention to two facts so vital in this connection, that I must allude to them. Both have stated substantially, that they are in the habit of going to perform operations with their expert or trained anæsthetizer. We are all more or less interested in baseball, and lovers of the National game know that there is little danger of the Boston Club going to New York without its battery. It is of vital importance to have their battery, the pitcher and catcher, to win in that game, and the same holds good with Dr. Westmoreland in his surgery in the country, when he goes with his battery, if he wishes to play a good game.

All that has been said by Drs. Davis and McGuire, I agree with fully.

Dr. McGuire has called attention to the causal relation which chloroform may bear to renal mischief; that it may induce albuminuria or renal trouble. That is a very curious statement to me. We all know that in puerperal eclampsia, in that class of cases in which we use it so commonly, we commonly find albuminuria, though chloroform is considered by all a safe remedy, and is used almost universally. For myself, I have not found, in my experience, evil results from its use as far as the kidneys were concerned. The difficulty in regard to the use of chloroform is, that you are not sustained by your colleagues in case of an accident. Chloroform kills quickly. Now, your patient is all right; then, in the snap of a finger he is dead. That holds good not only when used in surgery, but also in experimental work. I have seen a cat or dog straighten out all extremities, perfectly dead, and by no means could I resuscitate that cat or dog. The same holds good in regard to the human subjects.

Some one alluded to the use of chloroform or ether on the debauch. We have with us a distinguished surgeon of rare good judgment, and if my memory serves me right, a man entered his clinic with a contused and suppurating finger. The surgeon refused to amputate, stating that the man's condition would not justify surgery. But the man stated to him, some one else would do it if he didn't. An anæsthetic was given, and the man died in a few seconds. If the gentleman recalls the case, he perhaps will correct any error I may have made in reporting this case.

Now, it is a difficult matter indeed to say that your patient dies of anæsthesia or surgery. I am satisfied from my own observations, at home and abroad, that many patients die of anæsthesia. The great group of cases we see in general hospitals, water-logged and battened down with ether, I cannot see how they get well. I am satisfied that many of them die of anæsthesia alone, without surgery. If some patients are bound down thirty minutes or an hour, without surgery, I am satisfied they will die. Again, I will go farther, and say that if some of us were kept under the influence of an anæsthetic for an hour and a half, as given by the resident of a general hospital, we would die of the experiment alone, and with a healthy kidney. I have not found scant urine following the prolonged anæsthesia, excepting in exceptional cases, and the condition of the lesion I was operating for was quite sufficient to explain the presence of albumin, and the presence of renal trouble.

Probably some of you remember the lengthy article by our distinguished ex-chairman, Dr. Engelmann, of last year, on renal trouble with albuminuria, due to advanced forms of pelvic disease. We all well know that in this class of cases, where there is a fibroid or suppurative form of trouble, we have vesical, urethral and renal trouble from pressure, and we have recognized the importance of saving these patients from renal trouble, if possible. I have had some recent experience with scant urine and an abundance of albumin. The symptoms were marked in a recent case, some five months ago. A small fibroid, about the size of a child's head, developed, with a large collection of pus. The woman passed only a drachm of urine in the following forty-eight hours; her kidneys reacted, and she recovered, notwithstanding the fact that the undertaker had been ordered to come for her, as we felt sure she would die, and we told him to hold himself in readiness to receive her. She got well in spite of our anæsthesia, and a complicated operation which lasted some forty minutes. In this class of cases, a number of patients die a few hours after the operation—die from so-called shock, die of collapse, and it is difficult indeed to say whether they die of surgery or ether. I am satisfied they die of ether, or of what I sometimes call "chronic surgery." A recent teacher said to a class of some 800 medical students, in a difficult operation, while he was sweating over it: ."Gentlemen, you will have many a difficult case to deal with, but you must wriggle through with them some way." (Laughter.)

Dr. Albert VanderVeer, of Albany, N. Y.: I have listened to this paper with much interest, as well as the discussion. I have read many of the papers that have been given to the profession within the last few years, and have endeavored to gather from them all the information I could bearing upon this subject, especially the report of the Hyderabad Commission, and the paper presented to the profession by Dr. McGuire. While Dr. McGuire is a little emphatic in saying that we should not be dogmatic in our use of anæsthetics, there is a little expression of dogmatism here to-day.

Dr. Price spoke of deaths from ether. When we look back to the cases that have died where chloroform or ether has been administered, we generally find a pathological condition there that accounts for the death. Take a case like this: You have a man suffering from stone in the bladder. You examine his urine with the utmost care; you find no casts present, there is an absence of renal epithelium; you feel comparatively easy, also, as regards the pelvis of the kidney; you do a suprapubic cystotomy. Such a case I had not long ago, in a man 72 years of age. I did an operation for a good-sized stone, and believed his kidneys were in good condition. Ether was given as an anæsthetic. The operation was quick; the patient recovered nicely, but died on the fifth day, with the symptoms of collapse. Pulse very weak some time previous to death.

We made a post-mortem, and found in the pelvis of the kidney a number of small multiple abscesses, only one kidney being affected in this way. The other kidney had a red, hyperæmic appearance. These kidneys correspond with what we call a *surgical kidney*. If there is any gentleman here who has studied this subject, will he kindly tell us how to diagnose surgical kidney, and tell us when it is present.

When we have an experienced anæsthetist to administer the anæsthetic, I believe chloroform can be used, and that we should make our operations as quick as possible. I do not think it produces albuminuria, but I have seen deaths from chloroform, but not a death from ether. Early in my practice, I felt that chloroform was an anæsthetic that should be used with care, and I have avoided it, to a great extent, for this reason. I saw early a death from chloroform, where the anæsthetic was given only for a few minutes, and the man died. Another case occurred in the practice of one of my associates in Albany, where a man came into the clinic in the condition Dr. Price speaks of —an alcoholic condition. He had some trouble with his finger. The surgeon said, "We will amputate this finger." Ether was used, but he was in such a condition that a few drops of chloroform were added, mixing the two. The man had taken, perhaps, but half an ounce of the mixture, and was dead. A short time ago, another physician in our part of the country had done an operation upon a man's face and chin. I believe he had done the operation in his office. The man came back for an operation to loosen up some cicatricial tissue. The doctor had no one present in his office but two medical students, who had given chloroform before. They commenced to use chloroform, and before the doctor was ready to begin the operation, the man was dead. In my operations upon children, I use chloroform. I use chloroform, perhaps, in some cases where we have a very strong, able-bodied man to operate on.

In regard to ether, one gentleman made the assertion that we must select our cases with care. If we have reason to suspect kidney difficulty, I think chloroform is the safer. In the administration of ether, I do not like to say how many times I have used it. I have always made an effort to get one special man in my city to administer the anæsthetic; but if I have a telegram to go a few miles in the country to see a case of strangulated hernia, and my assistant is not to be found, I have to rely upon some one else to give it. I find that, in a large number of cases, I am obliged to do this to some extent. If there be a condition of anxiety, I give sometimes a hypodermic of 150th of a grain of atropia, and one-sixth of a grain of morphia. It relieves the nausea, etc.

Dr. H. P. C. Wilson, of Baltimore, Md.: We have under discussion a subject which is interesting to every one of us, and I simply arise to give my testimony in regard to the use of these anæsthetics. I have been giving chloroform for forty years, and I continue to give it, and I prefer it above all anæsthetics. It is true, deaths occur from chloroform, and deaths occur from ether. Deaths occur from alcohol, ether and chloroform. I saw one reported a short time since from the A. C. E. mixture, and the point that had been brought out to-day is a very strong one, that is, you must have the proper man to give the anæsthetic. Personally, I cannot do myself,or my patients, justice if I have an inexperienced man to give the anæsthetic. How often I have given chloroform I cannot say—certainly, I think, ten or fifteen thousand times in forty years' practice. Hardly a day passes that I do not give it, and sometimes repeatedly. I have never seen the slightest ill effects from it, nor have I ever seen a case in which I was frightened as to the result; and in going the rounds of the hospitals in Europe year after year, I have not seen ether given once. I have seen the surgeons in the general hospitals of Liverpool giving chloroform profusely. I saw one gentleman give alcohol, chloroform and ether, and that was Dr. Savage, of Birmingham, one of the most skilful and successful operators in the whole of Europe, but he is the only one that I have seen use anything but chloroform in either Edinburgh, Berlin, Liverpool, London, or Paris. We all feel when we are operating, on account of the sentiment of the profession in some localities, that if a patient dies with ether it is all right, but if she dies with chloroform it is all wrong; hence it is, some of us get nervous when we have a weak patient. We give chloroform for some time, and if the patient seems a little weaker we are tempted to give ether, simply because of the prejudice against chloroform in some localities; and we know that if from any cause our patient should die during, or after chloroform, we are sure to be blamed; not so with ether. The former is just as safe as the latter when judiciously given.

Dr. W. H. H. Cobb, Goldsboro, N. C.: I heartily agree with what has been said by Dr. Wilson, and I, like him, am wedded to chloroform. I have used ether but very little, and would not use it except I had a case of "chronic surgery" that Dr. Price speaks of. I think a great deal depends upon the manner of its administration. A great many push it too rapidly. I always precede it by giving whisky or brandy, and a small dose of atropia and morphia with it. I never push it. If I cannot have the proper assistant, I watch the patient myself until I get him thoroughly under the influence of it. I watch the respiration more than I would the pulse. A great many physicians feel the pulse and do not watch respiration. I find respiration would indicate danger quicker than the pulse.

Dr. Richard Douglas, Nashville: The subject, I believe, was albuminuria and its relation to surgical operations. The discussion has taken rather a turn towards the use of anæsthetics, and I only wish to say that, personally, I prefer chloroform. But Dr. Price has sounded the keynote. The sentiment of the profession and laity is against us if we should have a death from chloroform, and for that reason I fear to use it as a general anæsthetic, though I usually prefer it.

It has occurred to me to meet with several cases of abdominal surgery in which I found albuminuria present; and only recently I had the misfortune to have a case of suppurating ovarian cyst come under my care in which the microscope revealed an abundance of tube casts and undoubtedly organic disease of the kidney. But I was forced to operate, and then I gave the question some consideration as to what anæsthetic I should prefer. Finally, I deemed it best to give chloroform. Absolute suppression of urine followed, although there was reaction from the shock of the operation. The cyst was bound down by adhesions more or less; reaction followed, suppression of urine, and then death.

In all cases of fibroids—and I meet with a great many of them—I have taken the precaution to examine the urine, and its occurrence (albuminuria) is almost a constant complication with fibroids, not so with other evidences of organic disease of the kidney. You find albumin arising from pressure, if that may be given as a cause of albuminuria in pregnancy. We should be careful to look for something else than albuminuria. The essayist in his conclusions says that albumin was always an evidence of organic disease of the kidney, if I understood him correctly. It seems to me, that statement is hardly borne out by authorities. It is recognized as a transient affair sometimes due to many causes—emotional; for that reason, I should regard the presence of albumin itself as a contra-indication for operation.

Dr. Henry O. Marcy, of Boston: It is scarcely fair to prolong this discussion, yet I find every man has his opinion and the reason therefor, and coming as I do from the East, it is perhaps expected that I should say a few words in defense of ether as an anæsthetic.

The question which our reader has given us seems to me to have been fairly stated. I congratulate the essayist upon his thoughtful paper; it will thoroughly bear re-reading after it shall have been published in the Transactions. I am glad, however, the discussion has taken a broad range, because it is a practical question, and one difficult of solution. We all have our own impressions, thoughts, experiences and conclusions in reference to this matter, and have a perfect right to them.

I recall my experience with Sir James Paget in St. Bartholomew's Hospital more than twenty years ago, immediately following the death of Sir James Simpson. It is not generally known that the indirect cause of his death was the giving of his favorite anæsthetic chloroform, the patient dying upon the table before the operation was commenced. In two or three days the news was telegraphed over the world that this great master of surgery was dead. Angina pectoris was the so-called cause of his death. At this time Sir James Paget remarked, "I understand you are from Boston, and that you believe there, that the only true and proper anæsthetic is ether. Would you have the kindness to give it before my class in my amphitheatre, and explain its physiological effects." As a young man facing 500 pupils, I thought it was a rather difficult task. He said, "I do not suppose sulphuric ether has ever been administered in London for surgical operations"; and stated that within seven weeks many deaths had been reported in London from the administration of chloroform alone.

Dr. Price has emphasized the danger from chloroform in its effect upon the cardiac function, and this oftentimes is so sudden and pronounced that we are almost helpless. The doctor's experience coincides with my own, for I have seen over and over again, in the physiological laboratory, the death of animals from the administration of chloroform as an anæsthetic. I believe ether will kill when it is given in unusually large quantities. It is sometimes poured onto a napkin with the freedom of water, and then physicians wonder why there is not free and satisfactory respiration. They displace the residual air in the lung by the heavy ether vapor. The condition of the patient, the state of the kidneys, and the general physical vigor are all questions pertaining to this discussion, which we have not time to enter into this morning. No surgeon has a right to assume the responsibility of caring for his patient in the undertaking of a grave surgical operation until he has first carefully examined and determined these factors.

The best paper, and allusion to it has been omitted by every speaker, is that which was read by Professor Wood, at the International Medical Congress in Berlin, in which he reviews this subject carefully, showing the physiological conditions that pertain to the dangers of giving ether and other anæsthetics. I promise that when you come to read it, you will feel greatly instructed and indebted to Professor Wood for his masterly article upon this subject so important to every surgeon.

Dr. J. W. Long, of Randleman, N. C., in closing the discussion, said: I do not pretend in this paper that the subject is treated exhaustively, or that the deductions I have drawn are conclusive. I only hoped to draw the attention of the Association to this important subject in its various phases. I believe from my observations, that many surgeons largely overlook the dangers which may arise from the kidneys, and that we have very confused ideas as to whether these dangers arise from the effects of the anæsthetics, or from the effects of an operation.

I think Dr. Potter has sounded the keynote when he said we should have a man who understands the giving of anæsthetics, and that man should have a due appreciation of the kidneys and the dangers that arise from the kidneys.

Drs. Baxter and McGuire emphasized one point I hoped to make, that the term albuminuria, used in its generic sense, is an expression of kidney trouble. They emphasized the fact that such a condition may arise from the shock of the operation independent of the anæsthetic. The researches of the English show that albuminuria may be produced by abdominal section irrespective of the anæsthetic given; while it is almost an every day experience that operations in the genito-urinary tract induce marked kidney disturbance. When we come to analyze the influence of anæstheties upon the kidneys, we must choose operations outside of the abdominal and pelvic organs.

Dr. Davis says an anæsthetic may produce suppression of urine, and cites an experimental laparotomy on a dog in which suppression took place; but his case fails to illustrate because inabdominal operations it is impossible to separate the influence of the anæsthetic from that of the operation.

I do not think it has been proven that we can have a permanent albuminuria without organic lesions of the kidneys. While I do not consider in all cases of albuminuria we have organic renal lesion, for possibly albuminuria may arise from some functional disturbance, yet if it continues organic renal lesion always follows. This point, raised by my friend, Dr. Westmoreland, is a little foreign to the purposes of my paper. Another point mentioned by Dr. Davis is the tests for albumin. I will not answer, as it does not properly belong here, but will refer him to my lectures on that subject delivered before the North Carolina Medical Society this year. (See Transactions of that Society).

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-Therapeutic Association, held in Philadelphia, September 24, 25, and 26, 1891.

(*Discussion Continued from page 120.*)

Dr. Morton: I will turn to the point made by several observers. None, I notice, were critical in requiring an answer except Dr. Nunn, who seemed to think I had based too much upon chemical processes alone, and that I should have taken into account certain other unknown and unseen processes, like vital forces, etc. I can only reply to that by saying that I was obliged to deal with what exists. The chemical life of the animal cell is an actual fact; you can deal with it; we know what its history is, and we know its life; we know where it goes, and that it travels around in the blood stream; it goes through the vascular vessels, and we know its excretions, which is most important, for by its excretions we detect it. By its very existence as an animal we can say that it makes energy, and that it must be a positive force. I do not know anything about vital forces. I never tasted, heard, or felt them; I know nothing of entity or ideation. I do not think that we need go into vital mysteries or vital forces, as it is just as much a mystery at the end as it is at the beginning; but the chemical force is a demonstrable fact—it is a thing.

The doctor also made a point about static electricity, and I do not agree with him in that it does not possess any electrolytic effects. Had I time I would have read a further quotation from Dr. Hodge proving that the static current must have electrolytic effects, and we know from experiments that it must have.

The doctor referred to some facts about electricity on the two sides of the body. They are very interesting points in animal electricity which I did not touch upon. While Waller found that when the current was so directed that he could detect the current at the heel, and he found another case where the heart pointed on the other side of the body, he found the same on the other side. I am not talking of external surface, which vary all over the body, they change circuits according to the electrolytic condition of the parts by the disintegration of tissue that is localized; that is, where it starts from. You find the heart is there all the time, and from there the current starts all over the body.

I should have said, and Dr. Robinson's remarks bear out my own, I used one heavy disperser. Dr. Massey says we should have further data, and that I am collecting. I have made tests in various cases which show that the internal source was electro-positive, and that the pathological process was just the same as the physiological. Dr. Massey also brought up the point whether there be any decomposition in these. The doctor says that there is proof positive that the atoms and molecules have passed toward the centre and paired with new molecules. Dr. Massey drew attention to another point—that of the relation of vegetable organisms to our present ideas of disease. It seems to me that in the chemical processes, which I consider to be a disease, when they are going on it does not matter whether it is caused by the presence of a particular organism or the chemical products of that organism or whatever it may be. Of course you cannot kill the bacteria and nobody has demonstrated that without killing the patient. Then we would have a desideratum, but in the meantime until somebody discovers a germicide, reliable, and which is not noxious to the patient, we will use something which will destroy the chemical products and put the tissues in such condition that they will be able to resist the invasion of these poisonous animals, or whatever they may be. And by destroying the nidus this cell will be unable to live and grow. I thank you all for your kind expressions of opinion and hope that some of them will do something toward settling the questions of polarity. Remak started it, and ever since we have been struggling and have accomplished little, and it struck me that this basis might be a silver thread toward that region which all of us wish to take, which we all have to excuse ourselves for taking, and after all have to fall back on the chemical products for solid ground.

Dr. Plym. S. Hayes, of Chicago, Ill., read a paper entitled

SOME POINTS IN THE TECHNIQUE OF ELECTROLYTIC EPILATION.

The removal of superfluous hairs by means of electrolysis was primarily devised as a purely therapeutic measure. It was only after this method had been demonstrated to be a perfect success in the destruction of hairs in entropium that this procedure was diverted from its strictly therapeutic channel and applied to a broader field, and used in what may be called a cosmetic rather than a therapeutic sense. Even if confined to the cosmetic use there is a decided therapeutic effect produced in the liberation of many ladies from a self-imposed seclusion, if not actual close confinement, akin to prison life. The gloom produced from this seclusion has frequently made life a burden and been a factor of no small moment in the development of a melancholia.

A correspondent writes that he understands that this operation is largely a mechanical one and he desires instruction enough to know how, and then he will be able to do as well as any one. This latter statement he does not make, but from the tenor of his letter is readily inferred. The operation is mechanical much in the same sense that the repairing of a watch is mechanical; but it is not every watchmaker, to say nothing of the broad class of mechanics, to whom we would intrust our valuable watches.

Those who first demonstrated the possibility of the permanent removal of superfluous hair by means of electrolysis did their work so thoroughly and understood the laws of electrolysis so well, that but little has been added to the technique of the operation during the past six years.

Whether the operation is for therapeutic or cosmetic purposes two points are to be kept constantly in the mind, namely: to destroy the hair and then see to it that you do not leave indelible proof in scars that you have done your work thoroughly.

The statement is frequently made that this operation leaves no scars. The frequent occurrence of scars in positions that tell of the destruction of offending hairs, as well as the form of the scar left, gives the lie to the statement.

Without entering into the details of the operation I will take up the points that have aided me most in making the operation a perfect success.

The Needle.—The changes and modifications in the needle have shown that we did not have all that was to be desired in this important part of our apparatus.

Theoretically the needle should be so constructed that it will reach the bottom of the hair follicle and come in contact with the papilla without doing violence to the tissues, and finally to be so arranged that the current will exert its electrolytic affects only at the point of contact with the papilla. Practically this is impossible; but in this direction much more has been accomplished than would seem possible.

I early discovered that a blunt-pointed needle was much better than a sharp one, and a thin one, than a thick one.

After a long series of experiments I came to the conclusion that steel was the only material that would give us a needle of sufficient tenuity, and yet have the strength and rigidity to accomplish the desired result.

The best material for the needle is found in the jeweler's broach. This is ground to a diameter from a one two-hundredth to the three two-hundredths of an inch. From the point to a space of one-sixteenth of an inch back it should be slightly thicker than the shaft; although this bulbous point is of advantage, it is not an absolute necessity. The point of the needle is the main thing, and it should represent as nearly as possible a hemisphere. A conical point should never be used, because of the danger of piercing the walls of the hair follicle.

The temper of the jeweler's broach of necessity renders the steel exceedingly brittle, and it had been found of advantage to draw the temper in order to prevent breakage of the needle. This is best accomplished by taking a glass tube of about one-fourth inch in diameter and closing one end, and introducing the needle into the closed tube. This is then held in the flame of an alcohol lamp or Bunsen burner until the tube begins to become slightly red, when it is put aside to cool with the needle in it. When cold the needle will be found to have had its temper drawn so that it can be bent at right-angles and straightened again without breaking. It is still quite rigid enough for our purpose. Should the attempt be made to heat needles as thin as those described in the naked flame, they will take fire and burn, thus completely destroying their usefulness. I present for your consideration some needles prepared as I have directed, and furnished by the McIntosh Battery and Optical Company of Chicago.

It has been with great difficulty that I have been enabled to have the needles manufactured of the diameter given in this paper. While the shape was easily obtained and the finish of the needle all that could be desired, the size was, almost without exception, from three to five times too great. Before using a needle I invariably examine it with a lens of three-fourths inch focus in order to see that the point is the proper shape. If the shape is not as it should be, another needle is selected. My experience has been that I could ill afford to work with a needle that was not as it should be. I have found that a needle bent at an angle varying from 45 to 90 degrees from two- to three-eighths of an inch from its point, serves my purpose better than a straight one. All things considered, we accomplish our best results with the thinnest needle.

The Current.—The strength of current required varies from three-fourths of a milliampére to a milliampére and one-half, and in rare instances possibly three milliampéres. The strength of the current, however, must of necessity be regulated by the amount of chemical action which takes place around the needle, as well as by the amount of pain produced. In this operation the chemical action produced around the needle (the negative electrode) is a much better index than the milliameter. In fact, the milliameter is all but a useless instrument in electrolytic epillation.

As a rule, the less the current the longer the time required to destroy the tissue, including the hair papilla. From three to six cells of the diamond carbon battery is usually sufficient.

The question has frequently been asked whether storage cells could be used. The reply is, that if three or four storage cells are connected in series, for tension, the current obtained from such a battery can be used. The resistance of the tissues, of the thin steel needle, of the ordinary electrode, and of the cords, are so great that our milliameter will register no greater strength of current than as though we had used the same number of Bunsen cells.

The commercial current from an Edison plant has been successfully used. The pain produced is ordinarily so great as to make its use undesirable. The Edison current has an ordinary pressure of about 110 volts. To reduce this current so that we can use it for epillation we find that the difficulty to be overcome is that with our present means of controlling the current, we reduce the amperage much faster than we do the voltage and consequently get a current of tension which is more painful than current obtained from a battery. The results of a number of observations have led me to formulate the following:

Have as little resistance in the circuit outside of the battery as possible.

A battery with large cells and large elements is preferable to one with small elements. Two cells of a storage or galvano-cautery battery are equal to about three cells of a diamond carbon battery. Where the external resistance is as great as it is in this operation it will be found that the milliameter will register about one milliampère for three diamond-carbon or two storage or galvano-cautery cells. It is thus readily seen that the current from the storage or cautery battery has been so reduced by the resistance of the body and the circuit in which it is included as to be unable to heat the needle at all. We must count the volts rather than the ampères.

The Operation.—I desire to emphasize but one or two facts, rather than to give any detailed account of the operation.

Always use care in introducing the needle, and see that it follows the hair closely.

Do not carry the current so long as to produce a lesion that will form a scar on healing.

If the needle is arrested before it has entered much beyond the neck of the follicle, by reason of the size and density of the hair and root sheaths, allow the current to pass until the many adhesions that may exist at the point are overcome. (It would be well in this case to cause the needle to act on the tissues on all sides of the hair.) Remove the hair and the root sheathes will come with it if the operation has been carefully done. The reintroduction of the needle in the now empty follicle is easily accomplished and if care is used the papilla will be reached without trouble and destroyed with more certainty and less destruction of tissue than as though this method had not been followed. This method is only to be used in those cases where the needle does not follow the hair to the papilla when first introduced. The re-introduction of the needle insures the destruction of a much greater percentage of hairs than where this is not done.

In conclusion, we can state that but little that is new has been added to our methods in electrolytic epillation during the past few years. The advance in this branch has been brought about by improving the apparatus at hand, rather than by the introduction of new apparatus.

(*To be Continued.*)

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SATURDAY, JANUARY 30, 1892.

PREVALENT DISEASES.

The season through which we are passing will long be notable for the unusual amount of sickness that has prevailed in Europe and all North America.

La grippe has been almost universally prevalent, striking down the young, middle-aged, and old; and always leaving its victims in a prostrate condition, from which recovery is slow and often imperfect, the patient being peculiarly susceptible to inter-current affections.

The prevalence of pneumonia and its unusual fatality is, no doubt, largely due to the influences of the influenza epidemic.

Scarlet fever, diphtheria, and measles prevail in many localities, and in some places with great virulence. These infectious maladies are ordinarily the most preventable of diseases; but on account of the existence of pro-epidemic influences their spread and fatality has been phenomenal and difficult of control.

Typhoid fever, another of the infectious class, has been very prevalent and singularly fatal during the past year. In this city alone during the year 1891 there were reported 1,993 deaths from typhoid fever. This startling announcement has caused the municipal government to put forth the most heroic efforts to obtain a better water supply for the people, and a better drainage of the river and sewers. A house-to-house sanitary inspection should be made, and this should be thorough enough to include every trap in the plumbing of all dwellings.

Physicians in country districts will do well to inspect the water supply of their patrons; this should extend to the water provided for milk-cows, which is often a fruitful source of infectious disease.

The country privy-vault is ordinarily the most uncivilized thing to be found in our enlightened country. Specifications to justify this statement are unnecessary, for all of our readers are familiar with the facts in the case, and every one knows how frequently the little house in the corner of the garden is the originator of one disease or another.

A greater work in the cause of sanitary science is not open to State Boards of Health than the bringing about of a reformation in the construction and location of country privy-vaults, and wherever it is possible bring about the introduction and common use of the earth closet.

Water from surface springs, that is highly prized and noted as being as clear as crystal, may be not only contaminated, but saturated with an imperceptible, poisonous seepage, filtered through a tortuous channel from the little garden house to the water vein that empties into the spring. Such springs are frequent originators of typhoid disease.

It should be borne in mind that typhoid pneumonia, with its characteristic continuous fever and diarrhœa, is as truly an infectious disease as typical typhoid, where the bowels alone are the seat of the malady, the lungs having become involved because of their susceptible condition.

The causes and control of epidemic diseases should have the attention of every practitioner of medicine, and the education of the people to an appreciation of the value of sanitary living and habits of life should be a part of every physician's work.

* * * *

A NATIONAL HEALTH DEPARTMENT, with its Secretary of Public Health, would be a factor and an influence of the most potent character in its instruction of the people in hygienic methods and conditions.

This measure that is now before Congress should have the active approval of every member of the American Medical Association. Every Congressman should be written to, urging his favorable attention to this very important subject. Letters of approval should also be sent to Dr. C. G. COMEGYS, of Cincinnati, who is chairman of the committee appointed at the last meeting of the American Medical Association to forward this most commendable measure. SENATOR SHERMAN has introduced the bill, and will use his influence to secure its passage through the Senate, but he needs the powerful backing of an active medical profession.

The secular press is doing well in giving its approval. Some papers have published in full the petition mailed in our January 2 issue, commenting on it most favorably. This is indicative of progress and appreciation; but the good work should go on. Six thousand letters from as many physicians to MR. SHERMAN, six thousand more to members of Congress, and six thousand to DR. COMEGYS, of Cincinnati, will do the work; one or two thousand might fail. Not one less than the number named should be sent.

A MEDICAL student in Chicago was fined last week for practicing medicine without a license.

CONTAMINATION OF RIVER WATER COURSES. AN EPIDEMIC OF TYPHOID FEVER.

The excessive prevalence of fever at Lowell, and other points on the Merrimac River, has led the municipal authorities of that city to institute an investigation into the water supply, and other suspected fever causes, which has brought out some most interesting and significant revelations. The report on this subject, as made by PROFESSOR W. T. SEDGWICK, biologist to the State Board of Health of Massachusetts, appears to be an exceptionally clear and forcible document. It was published in two of the April numbers of the *Boston Medical and Surgical Journal*. After considering the relations of the excessive typhoid rate and mortality with the milk supply, and excluding that as a probable source of danger, the author fixes his attention upon the drinking-water of the city, which has for many years been chiefly drawn from the Merrimac River. The writer shows by tables that the two cities of Lowell and Lawrence, both getting water from the same river, have been grave sufferers from fever, far beyond most of the other cities of the same State. In Lowell, there were, in 1889, 85.8 deaths by typhoid fever in each 100,000 of the population, while in 1890 the rate exceeded 158, under the same census. In Lawrence, the rate was higher in 1889, 124.2 per 100,000, than in Lowell; but in 1890 it rose to a less extent than in the adjoining city, namely: to 125.4 per 100,000. The tables also show that the cities of Manchester and Haverhill, although having many climatic and general conditions in common with Lowell and Lawrence, and although suffering to some extent from fever, have not, in either 1889 or 1890, approached, even when at their worst estate, within 38.7 per 100,000 of the lowest datum above given in regard to the city of Lowell. These facts have led to the conclusion that the cause of the recent epidemic could not be discovered in any general or climatic conditions. So, too, the fact that the two cities suffering the most severely, but only in respect of typhoid fever, excluded the idea of purely local influences. But a more positive proof of the suspected infected water supply was sought for and, it is believed, obtained beyond peradventure, in the discovery of distinct typhoidal pollution of Stony Brook, an important affluent of the Merrimac. PROFESSOR SEDGWICK was enabled to locate the occurrence of fever cases in August, September and October, 1890, the excreta from which, a part of the time at least, were discharged into the stream by means of a privy so built as to overhang the water. A heliotype illustration accompanies the report, showing the grossly unsanitary privy arrangements belonging to a foundry at which one or more of the typhoid cases worked during the time when diarrhœa was an urgent symptom. The illustration shows a frame structure, built on a staging expressly designed to ensure the dropping of all excreta from the foundry workmen directly into the running water which, a few miles below, is known to be the drinking supply of thousands of fellow-citizens. A grosser or more culpable sin against the health of a populous community could scarcely be portrayed by any other wood-cut of the same dimensions—about one-third of a page in size. It is almost as outspoken a charge against the fidelity of the local health officials as if they had been visited with an indictment of the Grand Jury, and reminds us of some of the graphic outline-drawings of PRIDGEN TEALE's primer on Dangers to Health, published about twenty years ago.

No sanitarian who is engaged in teaching or in lecturing upon the prevention of infectious disease can afford to be without a copy of this instructive picture. The point of difficulty in the proof of the propositions of the reporter is seen in the finding of the polluting cases just a little anterior in time to the outburst of the fever; and this the investigation has been apparently enabled satisfactorily to clear up by fixing the occurrence of four cases of fever along the banks of Stony Brook during a period of two months before the aggravation of the epidemic within the cities that took their water-supplies, in part, from that polluted stream. Of the precise conditions of the drinking water of Lowell during the epidemic, the author of the report cannot speak; but it is a most significant fact, as he points out, that within one month after the time of infection of one of the foundry cases, an epidemic of typhoid fever in Lowell rose very rapidly, culminated, and began to decline. Within that same month there was also the greatest mortality of any month during the year, namely, thirty deaths from typhoid fever. There was a typhoid mortality in Lowell during each one of the earlier months of the year, some of which mortality may be traceable to the earlier Stony Brook cases; the later phases of an epidemic description may have their explanation in an infection of the reservoir and supply-pipes of the city itself, and also by secondary infection from person to person, which is always a feature of typhoid epidemics.

The sluggish decline after New Year's day, 1891, registered upon the diagrams of monthly mortality is explicable by the recurrent crops of secondary infections which are inevitable to such epidemics; and the periodic fluctuations in the *weekly* mortality curve were probably due to the same kind of reinforcements. In support of this view, the author calls attention to the fact that the elevations occur at intervals, equal to the incubation-period of typhoid fever, namely, every two weeks—a fresh crop of cases springing up every fortnight.

The report concludes by saying that in the absence of any other sufficient source of contamination of the drinking water used by the people, the responsibility for the epidemic must naturally be ascribed to the undoubted infection of Stony Brook, three miles above Lowell; and it may be remarked that the villages bordering on that brook have never, in forty years, had so many cases of fever, liable to infect the stream, as in the past two years. The fever epidemics in both Lowell and Lawrence can thus be completely and satisfactorily accounted for, as well as the constant excess of their typhoid-rate, from which both these cities have long suffered. There is, says the report, good reason to believe that the germs of the fever have been carried alive and virulent the three miles from Stony Brook to Lowell, and nine miles further, from Lowell to Lawrence; and perhaps even, under favorable condition, those germs may have been transported from Manchester, N. H., or even more distant points, arriving at Lowell alive and virulent, so that until a new source of supply shall have been obtained the water taken from the Merrimac River must be regarded as a menace to health, both constant and serious. Numerous bacteriological examinations were made of the Merrimac River water during the latter end of the epidemic; but at no time was the investigator able to isolate the bacillus of typhoid fever. It would doubtless have been different had the examinations been undertaken at an earlier stage of the stream's infection.

THE HEALTH OF VETERANS, OR TWENTY-FIVE YEARS AFTER THE WAR.

Dr. John L. Billings, of the army, has contributed to *The Forum*, for January, a brief study of the health of the survivors of the war, as judged by data compiled under the eleventh census. The author's intention is to show with regard to the troops of a single State, Massachusetts, what may at some future time, be worked up for the Northern States as a whole. In that State about 40,000 veterans were reported as living on the first of June, 1890. These form about one-eighth part of the white male population over forty years old. Hence, if they were all equally healthy, the number of sickness cases reported by the census should be seven times as great among the latter as among the former. But the census indicates that there is four times as much sickness among veterans as among other males of the same age. Among the insane, however, the veterans furnished a much smaller proportion than the other males over forty years of age. The sickness statistics were especially high among the veterans from diarrhœal diseases, rheumatism and heart disease. This fact might have been anticipated, and may, in part at least, be set down as one of the entailments of service in the field. Dr. Billings infers that while the health of some men has been improved by their war discipline—even to the extent of the preservation of lives that would have been lost if their owners had remained at home—the health of the average has been impaired by the exposures of the soldier's life. The veteran has a greater number of days of sickness than other men of the like age-period, and of course, has a somewhat less expectation of life. This conclusion, being based on the census results for a comparatively small territory is not regarded by Dr. Billings as other than a provisional one. Fuller data may considerably modify these inferences. It is not impossible also that the replies obtained by the census gatherers may have taken into account the minor pains and disorders of veterans and pensioners, which other men might not mention. This would be likely to apply with especial pertinence to those men who are applicants for pension relief.

Health Officer of the Port of New York, Dr. Jenkins.—Dr. W. T. Jenkins, of New York City, has been elected to succeed Dr. Wm. M. Smith, at the Quarantine Station in the harbor of New York. Dr. Smith has been holding over for about ten years, by reason of the inability of the State Senators to agree to the nominations made by successive Governors. The office is now a salaried one worth $10,000 per annum. When it was a fee-office, the income was estimated to be from $75,000 to $95,000 annually.

REPORT OF A CONFERENCE OF STATE AND MUNICIPAL BOARDS OF HEALTH HELD AT CHICAGO, THURSDAY, JANUARY 14, 1892.

In response to a suggestion of the State Board of Health of Pennsylvania, a conference of State and Municipal Boards of Health took place at the Grand Pacific Hotel, Chicago, Thursday, January 14, at 10:30 a. m.

Present, the following Secretaries or representatives of State Boards of Health: C. N. Hewitt, Minnesota; H. B. Baker, Michigan; C. D. Smith, Maine; F. W. Reilly, Illinois; M. O'Brien, Kansas; J. T. Reeve, Wisconsin; H. H. Clark, Iowa; Benjamin Lee, Pennsylvania; Dr. J. H. Rauch, representing the American Public Health Association; Dr. S. P. Wise, Ohio. The following representatives of Municipal Boards of Health and cities: Hon. Peter Rush, Comptroller of Detroit; Dr. McShane, Health Commissioner of Baltimore; John D. Ware, Health Commissioner, Chicago; D. S. Shellaberger, Health Commissioner, Sioux City; Dr. O. B. Wingate, Health Commissioner, Milwaukee; Dr. Jamin Strong, Health Commissioner, Cleveland, Ohio; J. H. Kellogg, Secretary State Board of Health, Michigan; Dr. C. McLellan, delegate from Provincial Board of Health of Ontario.

Letters or telegrams were received from the Secretaries of fifteen State Boards of Health and the Boards of Health of eight cities regretting their inability to be present, expressing their sympathy with the movement, and promising the hearty coöperation of their respective bodies in any plan which might be determined on by the conference.

On motion of Dr. Benjamin Lee, Dr. John H. Rauch was called to the chair. Dr. Lee was elected Secretary. The Chairman called upon Dr. Lee to state the objects of the meeting. Dr. Lee complied with the request by reading a copy of a letter from Dr. Rauch to the Hon. Director-General of the Exposition, as follows:

COLONNADE HOTEL, PHILADELPHIA, PA.,
Jan. 7, 1892.

HON. GEORGE R. DAVIS, Director-General, Columbian Exposition, Chicago, Ills.:

Dear Sir:—His Excellency, the Governor of Pennsylvania, desiring to have the interests of his State presented in the fullest manner at the World's Columbian Exposition, communicated with Dr. Benjamin Lee, Secretary of the State Board of Health, requesting that the work of the Sanitary Department of the Commonwealth shall be brought to the attention of the public on that occasion in some fitting way.

Dr. Lee, feeling that the exhibit or presentation of a single State or Board would not be of sufficient interest and importance to attract general attention, considered it expedient to communicate with the Secretaries of State and Municipal Boards of Health and with myself, as Chairman of the Committee of the American Public Health Association, to coöperate with the Exposition Commission, with a view to obtaining such a general presentation of the organization and methods of the various sanitary bodies of the country, as would be both interesting and profitable.

As a result of this interchange of views, it has been decided to hold a conference of sanitarians, generally representative of official bodies, at Chicago, on Thursday, January 14, 1892. I feel it to be important that your commission should participate in this meeting, and trust you will be represented. It will be held at the Grand Pacific Hotel, and will convene at 10 A.M.

I find a very considerable degree of interest already awakened in the Exposition in this State. Very truly yours,

(Signed) JOHN H. RAUCH.

To the above letter the following reply was received:

OFFICE OF THE WORLD'S COLUMBIAN EXPOSITION,
CHICAGO, Jan. 11, 1892.

DR. JOHN H. RAUCH, Springfield, Ills.:

Sir:—I am in receipt of your favor of January 7, advising me of the proposed conference of Sanitarians at Chicago, January 14, 1892, and I shall take pleasure in arranging to have some representative of the Exposition present at the meeting.

I have referred your letter to Dr. S. H. Peabody, Chief of the Department of Liberal Arts, with the request that he give it his personal attention.

Thanking you for your interest in this branch of Exposition work, I am, very respectfully yours,

(Signed) GEORGE R. DAVIS, Director-General.

Dr. Lee considered that the above letters stated succinctly but sufficiently the objects of the conference. When called upon by the Governor of his State for a sanitary exhibit, he had felt entirely at a loss as to what suggestions to make. Since coming to Chicago, he had conversed with members of other Boards, and found that they had experienced the same difficulty. Interviews had taken place between Dr. Rauch and himself and President Baker of the Exposition, the President of the Department of Liberal Arts, and the President of the Department of Auxiliary Congresses, which showed that, while those who were commercially interested in sanitary appliances had been prompt in their applications for space so that there would be a complete and valuable exhibit of such articles, the scientific aspect of sanitary work had as yet received little attention. He felt convinced that the officers of the Exposition would be only too glad to have the aid of this conference in organizing that branch of the exhibition.

Dr. Hewitt stated briefly the work done by the committee of the American Public Health Association in this connection, up to the present time. He considered it important that this conference should work entirely in harmony with that committee. Discussion followed as to the method of raising funds for the purpose of the exhibit in each State, which was participated in by Drs. O'Brien, H. B. Baker and Smith. The chairman stated that President Baker had courteously offered the use of the Directors' room for the meeting, and some of the officers had accepted an invitation to be present. As the time fixed for the meeting there had already passed, he suggested that it would be well to adjourn to that place. On motion, the conference therefore adjourned to meet at once in the Directors' room. On reassembling, the chairman presented a copy of the official organization and schedule of exhibits of the Exposition, and at his request, that portion which referred to hygiene and sanitation was read by Dr. McShane, of Baltimore. The chairman also presented a copy of the schedule of exhibits of the Museum of Hygiene, held in connection with the meeting of the American Public Health Association in Brooklyn. Dr. Peabody, chairman of the Department of the Liberal Arts having arrived, was presented to the conference, and expressed his satisfaction that the sanitary officials of the country were coming to his aid in this important department, and his readiness to answer any questions that the members might suggest.

On behalf of the Director-General, he extended a courteous invitation to the members to visit the Exposition grounds under his guidance, which was accepted with thanks.

Dr. Peabody stated that he had as yet insufficient data for determining what space would be needed for the sanitary exhibit, and hoped to have some definite advice from this body on that point. The classification at present adopted offers all essential matters, but is opened to the rearrangement, on which also he would be glad to have suggestions. Dr. Baker inquired whether the opportunity would be offered for the exhibition of illustrated charts. Dr. Peabody replied that this was the most important part of the entire work, and although not mentioned directly in the catalogue, space would certainly be allowed. In the Educational Department, cards 22×28 inches in size would be used. These would be arranged in alcoves so that they could easily be read; cards would also be exhibited on winged frames. He considered it a matter of essential importance that there should be a collective sanitary exhibit, as distinct from the exhibits of the several States. Dr. Hewitt suggested that while the exhibit of sanitary appliances should be distinct from that of Boards of Health, yet it would be well to have it as nearly as possible in the same location. He also suggested that an exhibit of the progress of bacteriological examinations and processes would be of great interest to the public. As these were perishable in their nature, he desired to know at what time during the Exposition they could be presented. Dr. Peabody replied that it would be desirable to have successive exhibits of this kind during the entire exhibition. Experts might be appointed by the different physiological and hygienic laboratories throughout the country, to supervise and explain the demonstrations. On motion of Dr. Lee, it was resolved that this conference desires to coöperate in the fullest manner with the committee of the American Public Health Association on the World's Columbian Exposition. On motion of Dr. H. B. Baker, it was resolved that it is the sense of this conference, that there should be a *collective exhibit* of the work of State and municipal Boards of Health.

On motion of Dr. Smith, it was resolved that a committee of such number as the chairman may deem expedient be appointed, to formulate a uniform plan for demonstrating the organization, methods and results of State and Municipal Boards of Health and to report the same to each member of the conference and to all Boards of Health interested in the movement.

On motion the conference then adjourned.

(Signed) BENJAMIN LEE, Secretary.

NOTE: At the annual meeting of the American Public Health Association held at Kansas City, Mo., Oct. 20–23, 1891, the following resolution was adopted:

> *Resolved*, That this Association will hold its meeting in 1893, in the city of Chicago, and that so far as possible, the occasion be made an International Congress of Hygiene and Public Health.

The following is the committee appointed for the meeting of 1893, under the above resolution:

Dr. John H. Rauch, Chicago, Ill.; Dr. A. N. Bell, Brooklyn, N. Y.; Dr. Samuel Abbott, Wakefield, Mass.; Dr. Peter H. Bryce, Toronto, Canada; Dr. Charles N. Hewitt, Red Wing, Minn.; Dr. Lucien F. Salomon, New Orleans, La.; Dr. H. D. Fraser, Charleston, S. C.

The following is the committee appointed by Dr. Rauch to formulate a uniform plan of exhibit:

Dr. Benjamin Lee, Sec'y State Board of Health of Pennsylvania, Chairman; Dr. H. B. Baker, Secretary State Board of Health, Mich.; Dr. Franklin Staples, President of Minnesota State Board of Health; Dr. J. T. Reeve, Secretary Wisconsin State Board of Health; Dr. J. D. Kennedy, Secretary Iowa State Board of Health; Dr. F. W. Reilly, Secretary Illinois State Board of Health; Dr. C. N. Metcalf, Secretary Indiana State Board of Health; Dr. Wm. H. Ford, President Board of Health, city of Philadelphia; Dr. O. W. Wingate, Health Commissioner of the city of Milwaukee; Dr. J. D. Ware, Health Commissioner city of Chicago.

PERCENTUM SOLUTIONS IN PHARMACY.—Perhaps because few physicians are in the habit of prescribing solutions of percentage strength, a difference between medical and pharmaceutical arithmetic in this respect seems to have generally escaped notice. The physician will probably suppose that in prescribing 48 grains of a soluble salt to a fluid ounce [480 minims] of a dissolving menstruum he is ordering a ten percentum mixture; but if he write simply for a fluid-ounce of a 10% solution, he (or rather his patient) will usually get but 45.6 grains of the medicament. This not inconsiderable discrepancy arises from the apparently common pharmaceutic practice of reckoning a fluid-ounce by weight, instead of by measure, as 456 grains, and computing percentages on the latter basis. For example: A well-known firm of manufacturing chemists label their tablets of cocaine muriate with the information that "each tablet contains 2¼ grains, . . . or the required quantity to form, with 1 fluid drachm [57 grains] of water, a 4% solution of the salt." Without dwelling on the minor circumstance that 4% of 57 is 2.28 instead of 2.25, it is evident that since we measure our dosage (especially for subcutaneous injections) by minims, not by grains, one of these tablets in our 60-minim drachm gives us a 3.75% instead of a 4% solution. Of course, as the quantity and strength of the solution are increased, the deficit becomes greater; the difference between the two methods of estimating a fluid-ounce of a 20% solution amounting to nearly 5 grains of the salt. Many similar instances might be cited, and on the score of accuracy it might be further suggested that the stated weight of a fluid-ounce applies only to distilled water at a fraction over 39° Fahr. Enough, however, has been said if the attention of physicians be directed to the importance of calculating for themselves whether the manufacturer's dosage of potent drugs be that which they wish to administer.—ALFRED L. CARROLL, M.D., 30 West 59th street, New York.

DOMESTIC CORRESPONDENCE.

Tuberculocidin; or, Professor Klebs' Modification of Koch's Tuberculin.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Sir:—With a supply of this substance recently received by me from Prof. Klebs, he gives the following instructions as to its use and action: The beginning dose to be from two to five milligrams, and the increase to be rapid up to one, and subsequently to two, four, six, and eight centigrams.

Hectic fever is no contra-indication; in fact, the temperature rapidly decreases and the local conditions improve.

The preparation causes absolutely no fever in tubercular patients, and increasing fever when present is an indication for increasing doses.

The remedy is given daily, and when large doses are reached they are divided, half being given in the morning and the other half in the evening.

The disintegration of the bacilli becomes manifest after five to ten of the larger doses have been given. Cough and expectoration diminish and disappear rapidly, and a gain in weight and strength soon follows.

From Prof. Klebs' statement it would appear that tuberculocidin can be employed in cases where heretofore Koch's tuberculin was contra-indicated. The therapeutical effects claimed are identical with those heretofore observed by myself and others from Koch's preparation, obtainable, however, with much smaller doses, of from one-tenth to five milligrams.

With the necessary care Koch's tuberculin is entirely free from disagreeable symptoms, the same as Prof. Klebs' modification is claimed to be, and until the new substance can be produced so that the price, which now amounts to from $1 to $2.50 per average dose, is greatly reduced, there seems little need for its substitution, unless as an only and last resort in cases with high fever and otherwise very active progressing disease.

Even in such, I doubt the wisdom of so rapidly increased and large doses, and, in view of the experience of a year ago, with Koch's remedy, which was then given in what we now know to have been overdoses, I would caution against a repetition of the same blunders.

The impossible is not going to happen even from the employment of the Klebs' tuberculocidin, and, without doubt, we must still hold fast to the principles of nutrition and climatic influences, or eventually realize disappointment.

In the meanwhile, a cautious trial of the modified substance would seem proper only under every possible precaution, and I trust that Prof. Klebs may have led us one step further in the treatment of tuberculosis.

KARL VON RUCK, M.D.

Asheville, N. C., Jan. 14, 1892.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Sir:—In justice to those who participated in the discussion of the American Electro-Therapeutic Association, your readers should be informed that the stenographer's report was not revised or corrected before being published, which accounts for the many gross errors in the transactions as published in the JOURNAL. In many instances the errors are unmistakably typographical, and can be overlooked; but there are some errors of omissions which completely prevent the meaning.

In the issue of January 9 the report has misrepresented my remarks in many respects. For instance, I never said Apostoli used an electrode in the uterus the size of an orange; but may have said it was the size of my thumb. Nor did I say that I had abandoned puncture. I am a strong advocate of vaginal puncture, but said I had abandoned *abdominal* puncture.

I have written previously correcting some errors in my own remarks in another issue, but for some reason my letter was not published. Respectfully, A. H. GOELET.

New York, Jan. 18, 1892.

[In explanation of the above we have to state that the report of The American Electro-Therapeutic Association was furnished the JOURNAL by the President of that association, and published as revised by him.—EDITOR.]

SELECTIONS.

FURTHER CONSIDERATION OF THE ANALYSIS OF RECORDED CASES OF PHTHISIS PULMONALIS.—In the summer of 1889 I presented to the Colorado State Medical Society an analysis of one hundred recorded cases, showing the effects of the climate of Colorado upon cases of phthisis pulmonalis, from which analysis I drew the following conclusions: "Taking cases as they come to us, we can expect improvement in two out of three; that men do better than women, as in fact they do anywhere; that persons over twenty years of age do better than under twenty, and that over thirty years of age do still better; that heredity, however, is no bar to a person's coming to Colorado, but that the more indirect the inheritance the better are his chances. Nor should a hæmorrhagic tendency debar one from coming, as such cases do admirably well; that altitude *per se* is not a producer of hæmorrhage: that the chances of obtaining an arrest of the trouble are improved by the patient's possessing a sound digestion, a good appetite, and a pulse and temperature not much raised above the normal; and that patients in the early stages of the disease, especially if their digestion be sound, appetite good, and pulse and temperature nearly normal, are the fittest subjects for our climate, whether they have any hereditary tendency or not."

Very singularly my conclusions were corroborated by Dr. Solly, of Colorado Springs, in an article read before this association at its last annual meeting. From the analysis of one hundred and forty-one cases, coming under his observation, he likewise concluded that two out of three cases coming to Colorado received benefit, which result was all the more gratifying, as his work was entirely independent of mine.

Two years and three months have now passed by since I made my report, and it is my wish at this present time, so far as I am able, to bring my report down to date; an undertaking which I approach with some hesitancy, because of a dread that, after all, however conscientiously I may analyze the cases, my results may not do full justice to the curative effects of the Colorado climate.

At the time of my previous report I concluded that, of my one hundred cases, 50 per cent. were very much benefited by our climate; that there was 17 per cent. additional of persons who showed improvement, although not equal to that of the first class; making in all, as it seemed to me, 67 per cent. of cases that received a benefit by coming to Colorado. Of the remaining thirty-three cases twenty-seven had died, and seven seemed to be positively worse than they were on coming. The intervening time of two years has simplified matters somewhat for me, as, so far as I have been able to follow the cases, I see either a positive improvement or a positive retrogression. Out of my one hundred cases, at the time of my present report, I know of forty-three deaths. There are twenty-four additional cases of which my knowledge does not extend up to date, leaving me with thirty-three now living, of whose condition I can speak with a certain degree of assurance.

If, now, we take the thirty-three cases, I find that thirty-two of them are so much improved that they have been able to take up the burdens of life again, either in Colorado or in their former locations, and so might fairly be classed under the heading of cured, according to the definition of Williams and other writers. The remaining one case is in a somewhat worse condition than when he came to Colorado, he being amongst the class that I formerly spoke of as somewhat improved; but, to offset his condition, I find that one whom I formerly classed as worse, is to-day very much improved.

Of the thirty-two, whose condition is improved, ten are now living at or near sea-level, and, so far as I can learn of their condition, are not showing any recurrence of symptoms, or experiencing much inconvenience, a fact which is of exceeding interest as demonstrating a point on which the profession is as yet divided, namely, with reference to the advisability of patients who have received an arrest of their trouble in Colorado, returning to lower elevations. It hardly seems fair to me to class all of the thirty-two as cured, for, despite the fact that they are actively engaged in the duties of life, in some instances there are yet remaining cough and physical signs. Six of my list can be classed under this head, who, though able to work, are nevertheless occasionally subject to a recurrence of their symptoms, and at all times have to exercise a certain amount of caution. The remaining twenty-six, it seems, can be fairly spoken of as cases of cured, cases in regard to whom most persons would scarcely presume that they had ever had any pulmonary trouble, and who are able to go about their duties like other men.

If, then, we speak of 26 per cent. as the ratio of cured to be obtained from a residence in Colorado climate, it seems to me that we would hardly be doing the climate justice, inasmuch as some of the cases that have passed from our observation were, at the time they were last seen, such as might be fairly classed under the heading of cured. Of this number I can now recall six, which will bring my percentage up to 32 per cent., a ratio which I find is again confirmed by Dr. Solly's experience, as stated in his report to the Colorado State Medical Society, at its last annual session, and which is furthermore in accord with the results recorded by others, as the ratio of cures that may be expected from treatment in high altitude resorts.

In passing it may be admissible for me to state that of the twenty-four cases that have passed from my observation, I regarded the condition of twenty-two as very much improved, when last seen, and of six as so markedly improved as to warrant a return to their homes, and hence I have spoken of them as cured. So, if I should add these twenty-two cases to the thirty-two now under observation, and whose condition is very markedly improved, it would bring my percentage of benefited cases up to 54, which, while it is somewhat less than the percentage which I had obtained on a previous analysis, will probably come nearer a fair statement of the case.

Of the forty-three who have died, two were doing remarkably well until attacked with an intercurrent disease which carried them off, leaving forty-one cases that in my best judgment died of their pulmonary trouble.

An analysis of the forty-three cases shows the following results, which, it seems to me, will convey some impression of the effect of the climate of Colorado upon pulmonary trouble, and, in a somewhat negative way to be sure, will illustrate the class of cases that are suited to this climate.

With reference to the sex of patients, I find that of my one hundred cases fourteen were women, and of these eight died, leaving six unaccounted for, but much improved. Of these, three are to-day living in the East, and doing very well; one is in Colorado, apparently cured of pulmonary disease, and two I have lost sight of. To reduce this to a percentage, it makes about 57 per cent. of the female patients who have died, as against 40 per cent. of the male; seeming to indicate, as my previous analysis did, that women do not do quite so well in this climate as men do, a result which probably will hold wherever pulmonary disease is treated.

With reference to the age of the patients, of the forty-three who have died three were under twenty years of age, making a percentage of 100 of all my patients under twenty at the time of my first examination.

Between 20 and 30 there were 20 deaths, a ratio of 37.7 per cent.
" 30 and 40 " " 15 " " 46.8 "
" 40 and 50 " " 4 " " 50 "
Over 50 " was 1 death, " 25 "

which leaves me to infer that patients have a greater recuperative power and do better if the disease takes them between twenty and thirty than if it comes upon them when they are between thirty and forty, and that they do better in that decade than they do between forty and fifty; in other words, that under twenty they do not do well, and between twenty and fifty the chances diminish as they get older, a result which is not altogether in accord with my previous observations.

With reference to the question of inheritance, I find there were ten in whom there is a history of one or both parents having been affected with pulmonary trouble, one who had one or both grandparents affected, three who had uncles or aunts, seven who had brothers or sisters, and twenty-two in whom there was no history of inheritance; which goes to show that of the forty-three deaths twenty-one had a history of inheritance and twenty-two had not, making it about 50 per cent. in each case.

If, now, we compare the results with the full table of one hundred cases, I find that of the cases who had a history of inheritance when they came under my care, 40.7 per cent. of them died; whereas, of the cases who had no history of inheritance at the time of coming under my care, 45.8 per cent. have died, a result which goes to confirm my previous observation that heredity is no drawback to a person's coming to Colorado.

As regards hæmorrhages: Of my total number of one hundred cases forty-four had a history of having had one hæmorrhage or more previous to coming to Colorado. I find that of the forty-three deaths, ten of them can be directly attributed to hæmorrhage, and of these ten it occurred in two cases where there had never been any previous history of hæmorrhage. This would make a percentage of 18.6 of such persons who came to Colorado with previous histories, which goes very conclusively to prove the statement made in my previous article, that this climate is not a producer of hæmorrhage, and that, contrary to a somewhat general belief, hæmorrhagic cases do admirably well here, a result which is confirmed by the observations of Dr. Jacob Reed, Jr., of Colorado Springs, as is outlined in an article read before the Colorado State Medical Society several years ago.

I find that of the forty-three cases who have died, in eleven the appetite is stated as having been very good, fair in another eleven, and positively bad or wanting in twenty-one. The digestion was very much impaired in twenty, and the action of the bowels irregular in fifteen, which would lend some credence to the belief that the condition of the patient as regards perfect or imperfect assimilation is a very considerable factor in the prognosis, those doing best where the appetite is good, the digestion perfect, and the bowels regular: and, on the other hand, those doing poorly where the appetite is wanting and digestion imperfect.

As regards pulse and temperature of the forty-three fatal cases, there were twenty-three in whom the pulse ran from 100 to 130 per minute and whose temperature was from 100° to 104.2° at the time they first came under my observation. In six of the cases the records are wanting, whereas of the remaining cases the temperature and pulse varied but slightly from the normal, showing that irritability of temperament, as indicated by temperature and pulse, is an unfavorable indication with reference to prognosis.

With reference to the condition of the lungs at the time of coming under my observation, I find that of the forty-three cases, thirteen may be classed as having been in the first stage of the disease, nine in the second, and twenty-one in the third, a result which is in accord with the usual experience that high altitude treatment is better adapted to persons in the earlier than the later stages of the disease, especially if the slight amount of trouble be accompanied by good digestion and very little nervous irritability, as shown by the temperature and pulse.

The results as a whole, it seems to me, can fairly be taken as corroborative of the conclusion that I drew from my previous analysis, which conclusion I have quoted at the opening of this article.—S. A. Fisk, M.D., in *The Climatologist.*

Pyogenic Microbes of Lower Animals.—Mr. S. Whitbick reported the following among other results obtained during his investigation of the microbes found in the pus occurring in lower animals. Staphylococcus pyogenes aureus was isolated in pus from a deep-seated abscess in the neck of a horse. Staphylococcus pyogenes citreus was obtained from a "fistula of a horse." The bacillus pyocyaneus was isolated from an open synovial bursa of a horse. In the liver of a horse, that had died of septic poisoning, the pyogenes fœtidus was found. His conclusions are that the bacillus pyocyaneus was the most malignant germ of those isolated, while the staphylococcus pyogenes aureus was the most common form.—*The Vis Medicatrix*, December, 1891.

Hygiene and Dietetics of the Arthritic.—In the December number of *The Physician and Surgeon*, Dr. Lucas Championnière, in the course of an able article upon this subject, deduces the following rules as to the best diet to be ordered for the patient. The author says that for those suffering from *pronounced* arthritis who are very *lithæmic*, preference should be given to white meats, veal and young animals, mutton, and lastly beef. In some cases, however, game or venison should be denied. If fish be ordered, the white-meated is best, as we find it in the sole, haddock, or codfish, while such colored or oily flesh as in the salmon, eel, mackerel, or sturgeon had best be avoided. Shellfish and crustacea, while nutritious, the author considers as too compact in their tissues, and hence indigestible, and on this account inadvisable for the arthritic.

Peas and beans yield a considerable amount of nitrogenous matter, but, strange to say, do not seem to form uric acid. The fruit-acids become alkaline in the system, and these two classes the author advises in the diet table.

As to liquids, Dr. Championnière considers water especially good for the gouty. Some writers have gone so far as to say that this article alone is sufficient for a cure. Water increases the excretion of urea, and it is proven that the production of uric acid is in indirect ratio to the formation of urea, hence the more water the patient consumes the less uric acid is formed. Finally, water aids in the elimination of all waste organic products, and in the dissolution of the fatty acids which constitute gall-stones. A dry diet, it is thus seen, is rather a dangerous one for the arthritic.

As to wines the author advises very light varieties. Alcoholic wines and champagne especially are most injurious.

The following rules are held to be applicable in every case: See that the arthritic patient produces and absorbs the least possible amount of organic poison which, by irritating the less resisting connective tissue, would cause arthritic manifestations.

Modify the arthritic diathesis as far as possible by means of exercise, gymnastics, hydrotherapy, massage, etc.

Attend to the amount and quality of the food; hasten nutritive changes; facilitate elimination of all organic waste and toxines by stimulation of the emunctories, which are usually unreliable in arthritic patients.

The Conformation of the Skull.—The conformation of the skull has always been a fruitful theme for discussion, relative to the cerebral development and its functions. Some time since, Bullen made an investigation of the skulls of 1,565 patients who had died at the Wakefield Asylum. He says that the irregularities of the cranium have been frequently noticed, but the main one has been that of lack of symmetry. Of the entire number of cases examined, more than 100 had some form of irregularity. The large skull—either square or circular—is met with oftenest in maniacs. The elongated occurs more frequently in cases of general paralysis and epilepsy; and those cases in which the vault resembled a dome were found particularly in cases of mania, and some cases of general paralysis. In cases of melancholia, there seemed to be a special development of the frontal region, while in syphilis a lack of development in the frontal region was the most striking feature.

The anomalies in shape which would seem to indicate an inferior condition, were found in totally different cases; as, for instance, in imbeciles and others where there was normal development of the faculties. Lack of symmetry was found in 20 per cent. of all the cases examined, and was demonstrated by some anomaly in the conformation of the frontal, parietal or occipital regions, manifested by a diminution of capacity of the sides of the skull, or by a kind of torsion, by which one side advanced forward more than the other. The first variety, that in which there existed a local malformation, was found in 40 per cent. of all cases in which lack of symmetry was found, and it occurred on the left side twice as often as on the right. The temporo-parietal and parieto-occipital region presented 30 per cent. of these malformations, the majority being, as with the others, on the left side, although the cases in which the projection of the right frontal region over the cranial anomaly was just double that of the left. The capacity of one-half of the skull cavity was increased in 50 per cent. of the cases, the majority being on the right side, and when the right side was more voluminous, there was observed a superiority of the frontal region of the same side, and coincident with a superiority of the temporo-parietal region of the left side. This lack of symmetry was greatest amongst cases of chronic melancholia, next in epilepsy, and least amongst those of general paralysis. The capacity of each half of the skull did not always correspond with the size of its cerebral hemispheres; in fact, a small cerebral hemisphere often occupied a comparatively bare half of the cranium. In a series of twenty-nine cases of dementia, the right hemisphere was the larger fourteen times out of twenty-three, while the diminution in the capacity of the right side of the skull occurred seventeen times to twelve of the left side. In twelve of these cases only did each half of the skull correspond in size to the cerebral hemisphere.

The author also examined the membranes, convolutions, blood-vessels, etc., and gives an interesting array of figures for the different mental affections and different ages.—*Journal of Nervous and Mental Disease.*

On the Etiology of Peripheral Facial Paralysis.—Dr. S. Goldfan (*Neurolog. Centralbl.*, Vol. xvi). The author considers four cases of facial paralysis occurring in syphilitic subjects; the symptoms referable to the facial nerve coming on a very short time after the primary lesion—that is, before or during the stage of roseola. The symptoms presented themselves in the first case in thirty-five days; in the second, in three months; in the third, in fifteen days: and in the fourth, in twenty days. In one of the cases, an ordinary attributable cause was present, namely: exposure to cold; but this was very slight. In the second the patient, an actor, had simulated toothache on the stage the evening before, pressing against the side of his face with his handkerchief. In the remaining two cases, no attributable cause could be assigned. Facial paralysis occurring during the third stage of syphilis is ordinarily not a difficult matter to explain, for it may be due to gummata, basal meningitis, periostitis, exostosis, caries of the petrous portion of the bone, or changes in the trunk of the nerve itself; but the author finds it difficult to explain how it occurs in cases where all these factors can be ruled out. Lang's hypothesis, that is, that during the appearance of the syphilitic exanthem, there is a coincident infiltration into the basal meninges, or the central nervous system itself, which is sufficient to account for the peripheral paralysis. This the author considers untenable. The only light he can throw on the problem, is expressed by saying that under the influence of the syphilitic infection, and in the very early stages of the disease, particularly during the period of eruption, there exists a marked disposition on the part of the facial nerves to peripheral inflammation and paralysis.—*Journal of Nervous and Mental Disease.*

A Secretary of Public Health.—The petition put forth by a committee of the American Medical Association, praying Congress to establish a Department of Public Health, is an able and interesting document. It ought to make some impression upon our legislators at Washington.

The petition acknowledges the work in public health done by the various existing departments of the Government; it describes the field occupied by State medicine. It skilfully touches upon the subject of "medical "schools" in the following way:

"The question," it says, "may arise with some person, whether such a department would subserve the interests of any particular school? We respectfully reply that amid all the apparent disparity in medical practice, there is one true, severe unity, and to attain this all true physicians are continually striving. There is no disputation in medical science about anatomy, physiology, pathology, chemistry, physics, or preventive medicine; the difference among doctors lies in therapeutics or the treatment of disease, and as in the past, so for all the future, practitioners will use a variety of remedies and in varying quantities, and there will be different modes of management of sick or injured people. With the advance in the way of education, the differences in treatment will gradually become more unified."

It recognizes the fact that the General Government's powers would be limited in many ways, but believes that the field would be large enough.

A Secretary of Public Health, we are assured, would represent the medical consciousness of the Nation, and "become one to whom we could look for the exploitation of measures that will direct continuous scientific and collective investigation in regard to endemic, contagious, and other diseases; the enlightenment of the people in sanitary ways of living; the dissemination of information respecting the most favorable places of residence for those afflicted with such chronic diseases as asthma, rheumatism, neuralgia, and consumption; the examination of food and drinks; medicinal springs; the collection and tabulation of vital statistics at large and in various localities, such as the congested areas of our great cities and among various races. He would be able to coöperate with State Boards of Health, the Signal Service, the medical departments of the Army, Navy, and Marine Service, unify and utilize their work, and thus make the Department of Public Health the repository of the most important facts that concern the comfort of the people; and his duties will grow broader and stronger in adaptability to public needs."

A Secretary of Public Health, to put the matter in few words, could, as an officer of the National Government, deal executively only with the subject of national quarantine. All his other functions would have to be those of an adviser, teacher, investigator, and coöperator. But such an advisor and investigator, with the power and dignity of the Government behind him, would wield an enormous influence for good. The establishment of such an office would at once attract such attention to hygiene, and give such prominence to its work, that advances in the education of the people and the promotion of sanitary reform would take place much more rapidly. Very few people yet understand that there is no reason why such things as measles, scarlet fever, yellow fever, diphtheria, or cholera should exist, and that in time civilized communities will stamp them out.—*N. Y. Med. Record.*

Professor Pancoast on Influenza.—"La Grippe" is not a proper name for the disease, as that is simply the name of influenza in France, and especially in Paris, where the name originated; it is more than influenza, it is a malarial break-bone fever. It is called "la grippe" because, like the influenza, it takes one suddenly; and it is a sort of blood-poisoning caused by malaria. The poison is a microcosm, which produces malaria; this microcosm is now frequently spoken of.

The great prostration and the pains in the extremities, in the limbs, deep-seated pains in the limbs and bones, make it resemble the malarial fever of the mountains of South Carolina, called the Dengue, or break-bone fever, which, like this malarial influenza, leaves the patient very much prostrated. One of the great elements of the disease which we have to combat, is the prostration and consequent debility of the patient. In my surgical operations I have had to combat it, and many cases have been taken with the "grippe" in bed without any possibility of contagion. I do not believe it is a contagious disease, but it is an epidemic simply; there must be a receptivity in the individual, an exhaustion or fatigue, which predisposes him to disease, and thus renders him liable to the action of the microcosm floating in the atmosphere. I feel fully persuaded that it is not a contagious disease, for some of my surgical patients have been taken suddenly in bed with it, being confined there by an operation, and have not been exposed to it by contact with any one suffering from the influenza.

In addition, I have noticed that while the influenza has been prevailing, the inflammatory and surgical diseases which I have been treating seemed to take on a low type of inflammation, and I have found it necessary, at these times, more than usually, to give tonics to build up my patients, and to keep up their tone.

I am also in the habit of telling my patients who are able to walk about, to talk good care of themselves, so that they would not catch the influenza, nor suffer from the epidemic. By making him take care of his health, by keeping up his health, by keeping up his strength, and taking a tonic, if necessary, and attending to the secretions and taking exercise in the open air, by keeping up his tone, the patient is able to resist the epidemic poison. By keeping up their strength and taking exercise in the open air and keeping their health in the best condition, they are able to resist the epidemic and are able to throw it off more easily if attacked; but if debilitated or run down, they develop a condition of receptivity for the poison which renders them easy victims. —*The Times and Register.*

The Characters of the Present Pandemic of Influenza. —According to observations made at recent meetings of the Berlin Medical Society, it would seem that the epidemic of influenza began there during the first week of November, the earliest cases admitted into hospital having come under treatment on November 7. Rehemann stated that the most noticeable difference between this and other recent epidemics has been the large number of women and children, and the small number of outdoor workers attacked. Guttmann mentioned an instance in which the admission of a single patient suffering from influenza was shortly followed by the occurrence of thirteen fresh cases. Fränkel, who took notes of 138 cases, found that only nine (6.5 per cent.) had suffered from the disease before. The chief complications have been pneumonia and heart failure. The effect on the death rate in Berlin has not been so marked as during the last epidemic, but it has been considerable (27 *per mille* as compared with an average of 18). In other parts of Germany the effect has been more marked; thus official statistics show that the death-rate has been doubled, or nearly double, in several towns. It rose, for instance, to 44 in Posen (average 21), to 45.6 in Frankfort-on-Oder (average 23.2), in Bremen to 34.3 (average 17.1), and in Rostock to 33.5 (average 15.6).—*British Medical Journal.*

The Test of a Medical College in Good Standing.—The Oregon Supreme Court has reversed the finding of the Circuit Court in the case of Barmore *vs.* the State Board of Examiners. Barmore had been refused a certificate by the board upon the ground that the Oregon State Board had adopted a rule which defined "medical institution in good standing," as used in the act, to mean "only those institutions which required three regular courses or sessions of six months each, extending over a period of three years' time," and that the school of plaintiff did not, when he graduated, have such a three years' course. The action of the State Board is sustained.

The Anatomical Condition Found in the Brain of a Patient Dying of Carbonic-Oxide Poisoning.—A rare condition is reported by Dr. C. Cramer, in the *Centralb. f. Allgm. Path. u, Pathol. Anat.*, vol. ii., 1891, of a woman 71 years of age who suffered from the results of carbonic-oxide poisoning, the symptoms lasting for over a month. The poisoning resulted from premature closing of a stove damper, and the patient was found some hours later in an unconscious state, pulseless, and with extremely weak, feeble breathing. The unconsciousness lasted for three days. A week later the patient's mind became entirely deranged, and then she passed into a general apathetic condition, the pupils equal and reacting shortly, and a slight hyperæsthesia over the entire body. A fortnight afterwards the patient had an elevation of temperature with frequently repeated exacerbations. This continued for several days, the patient gradually sinking into a typhoid state and dying apparently from asthenia. On post-mortem examination the sinuses of the dura mater were found to be distended, and the pia mater over the convexities had lost its normal glistening appearance, and its blood-vessels were also very much distended. No marked loss or change in the substance of brain. The cortex and gray substance of the ganglia of the caudex cerebri were much redder than ordinarily, and the white substance peculiarly tough and resisting.

Miscroscopically, the tangential and supraradial layers of the cortex were clearly seen to be degenerated, resembling the condition found in senile dementia. Spread throughout the cortex were found numerous granular-like looking little bodies. The capillaries showed budding processes and the ganglionic cells were diseased. Spindle-shaped cells were sparsely scattered through the cortex, and the large vessels were for the most part normal.

Toward the center of the cortex the spindle-shaped cells were largely proliferated, and in the basal ganglia pons, and medulla a part of the blood-vessels were degenerated, and in a small spot at the floor of the aqueduct of Sylvius a proliferation of neuroglia was found.

Before the onset of the symptoms the patient had given no evidence of beginning senile dementia or general paralysis, and on this ground the author is inclined to refer the changes to the carbonic-oxide poisoning; whether it was the primary or secondary cause it is impossible to say. The case illustrates further how very prone the medullary fibers of the cortex are to degeneration from noxious or pernicious influences.

Circulation—The Condition of the Circulation of the Blood in the Brain During an Attack of Epilepsy.—Prof. W. S. Bechterew has recently reported some experiments on the condition of the circulation in the brain during attacks of epilepsy produced artificially in dogs, which are published in *Neurolog. Centralb.*, No. 22, 1891. The epileptic attacks were produced from irritation of the cortex cerebri by the electrical current or by the introduction into the circulation, through the femoral vein, of essence of absinthe, cinchonia, or cinchonidin. Then, after trephining, the state of the vessels were observed, these openings made over the motor areas or the occipital or laterally, in which was fitted a piece of glass so that they could be observed with the naked eye or by the use of a lens.

During the epileptic phenomena the smallest blood-vessels of the pia in the field of observation were seen to be distended, the brain substance became reddened and enlarged so that it pressed up against the glass. This distension of the brain substance passed away very gradually till the brain reached its normal condition, the blood-vessels that were most severely congested remaining the longest, and not disappearing till the animal was in a comatose condition.

These changes were more sharply marked when the epilepsy was induced by injecting irritants than when brought about by the electrical current.

The blood pressure determined in the circle of Willis and the carotid showed in the beginning of the tonic period there was ordinarily an elevation in the blood pressure in both ends of the arteries, and a strange elevation at the cerebral part as determined by the manometer (the method of Hurthle was used in determining blood pressure). This blood pressure reached its gradual height about the end of the tonic period. At the appearance of the clonic stage the blood pressure began to fall gradually, more strongly at the ends of the artery than peripherally, and at the end of the attack the pressure reached normal. Coincident with the changes in the blood pressure in the carotid were marked changes in the strength and rapidity of the heart and respiration. At the beginning of the tonic state a more or less distinct slowness and increase of strength in the heart and pulse beat was noticed. Ordinarily this condition soon gave way to a rapid and somewhat feeble pulse and heart beat. When the clonic period set in the heart again became slow and gradually got back to normal during the comatose period. The conclusions to be drawn from the respiratory changes are not so certain on account of the convulsions.

For Fœtid Breath.—The following is recommended in the *Revue Gènérale de Clinique et de Thérapeutique* for the above:

℞.—Saccharin,
Acid. salicylic,
Natri bicarbonate, āā gr. xv.
Alcoholis, ℥j.
Ol. menth. pip, gtt. x. ℳ.

Sig.—A teaspoonful in a wine-glassful of warm water, to be used as a gargle once or twice daily.—*St. Louis Medical and Surgical Journal.*

Male-fern is not an entirely harmless remedy, though long in use, and one of the best of anthelmintics. Dr. Eich does not favor the usual method of giving the drug fasting, since when the stomach is empty the absorption of the toxic principles into the general system is facilitated and poisonous symptoms may occur. Several fatal cases of poisoning are reported. The ethereal extract contains poisons which act upon the central nervous system, a tetano-toxine or tetanus-producing body playing an important rôle. The dose of ten grains, or two and a half drachms, should not be exceeded.—*Medical Record.*

The Antipyrin Habit.—Dr. Combernale relates in the *Bull. méd du Nord*, No. 12, 1891, that a servant girl suffering from polyarticular rheumatism of long duration was treated with antipyrin, which she took in dose of fifteen grains daily, and this amount was increased to thirty or forty-five grains on her day of fatigue. Without this excitant she suffered from general depression, stiffness of the fingers, and swelling of the feet. For this reason she continued to take the drug regularly for four years. At the expiration of this time she showed signs of round ulcer, with pharyngeal cough, general muscular weakness, nocturnal agitation, insomnia, and amenorrhœa. The drug was left off gradually and all these symptoms progressively disappeared.

The Influence of Pregnancy on Epilepsy.—An exhaustive article by Dr. Guder on this subject is carried through two numbers of the *Medicinish-chirurgisches Centralbl.* The author has made extended research into the data bearing on this question. This, taken conjointly with his own personal experience of such cases, enables him to draw the following conclusions: that epileptic attacks were, as a rule, absent during pregnancy, but that they were always sure to make their appearance during and after the puerperal period; that there was the fact of the off-spring of such women being predisposed to epileptic or eclamptic attacks, to be taken into consideration, For his part the author was disposed to persuade, as far as possible, epileptics from marriage and that if pregnancy did occur he was in favor of artificial abortion. He thought that an effective means of stamping out, or at any rate of preventing children being born with a predisposition to epilepsy, would be the sterilization of epileptics by castration or ligation of the tubes. As to the predisposition of epileptics to eclampsia there was still a great difference of opinion among observers in this direction. Nerlinger thought that for one thing a differential diagnosis of an attack, occurring during the puerperal state in an epileptic, was difficult to make, as to whether it was an epileptic or eclamptic seizure, and that as to the question of predisposition of epileptics to eclampsia the matter was by no means settled. And also that in young children predisposed by neurotic inheritance to epilepsy it would be a difficult matter to say whether the first attack was epilepsy or eclampsia. Fere thought that there was a close association, in predisposed neurotics, between epilepsy and eclampsia.—*Journal Nervous and Mental Diseases.*

Cancer in Relation to Insanity.—From a somewhat extended inquiry into the above subject, Dr. Herbert Snow, surgeon to the Cancer Hospital, London, concludes that:

1. "Cancerous disease among the insane is rare. Among individuals with congenital mental deficiency it seems to be almost wanting. 2. Cancer is not increasing in frequency among the insane. This fact is of no slight importance in connection with the view of cancer, as specially a disease of civilization largely caused by depressive mental emotion; and with the explanation of its greater prevalence in recent years on the ground of the increased wear and tear which nineteenth century life involves. 3. Cancer not uncommonly precedes and causes mental derangement without cerebral tumor formation. It should rank among the recognized causes of insanity."—*Journal of Mental Science.*

A Secretary of Public Health.—Senator Sherman has introduced a bill in the senate providing for the establishment of a department of public health under the charge of a medical officer, to be appointed from civil life by the president. This department shall obtain from consular officers at foreign ports all available information in regard to the sanitary condition of such ports and places, and also all information accessible from State and municipal authorities of the sanitary condition of places in the United States. All the information gathered is to be embodied in the form of a bulletin, and transmitted weekly to the marine-hospital service, collectors of customs, and to State and municipal health officers. The department shall also procure and tabulate statistics relating to marriages, births, deaths, the existence of epidemic diseases, and all information relating to climatic and other conditions affecting public health. The department is coöperative with State Boards of Health, the signal service, the medical department of the army, and other branches of the government, and utilize the results so as to make the new department a repository of public sanitary comfort.—*Chicago Medical Recorder.*

The Alvarenga Prize of the College of Physicians of Philadelphia.—The college announces that the award of the next Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1892. Essays intended for competition may be upon any subject in medicine, and must be received by the secretary of the college on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college.

Medicinal Qualities of Nutmegs.—The *Medical Bulletin* says: "The medicinal qualities of nutmegs are worthy of considerable attention on account of their value in the treatment of diarrhœa, many cases quickly yielding to the administration of ½ dram in milk. Insomnia may be effectually relieved by them when opium fails and chloral is not advisable. It is also a sedative in delirium tremens, and can be given with safety and marked benefit. An excellent ointment for itching and irritable hæmorrhoids is composed of two drams of powdered nutmegs, one dram of tannic acid, and one ounce of lard."—*National Druggist.*

BOOK REVIEWS.

Addresses and Essays. By G. Frank Lydston, M.D., Chicago.

This is a very acceptable reprint of some of the author's brightest and best essays merged into a convenient form. They include "The Evolution of the Local Venereal Diseases," "Tropho-neurosis as a Factor in the Phenomena of Syphilis," "The Rationale of Extension in Diseases of the Spinal Cord," "Aberrant Sexual Differentiation," "Gonorrhœa in Women," "A Plea for Early Operation in Acute Peritonitis," and "Materialism vs. Sentiment in the Study of Crimes." Lack of space forbids the review which the several papers merit, but we cannot refrain from calling attention to the last two essays. Dr. Lydston's plea for early operation in acute peritonitis is within the bounds of reason, and not a sweeping, general demand for the use of the knife. The last essay shows a wide acquaintance with the literature and pathology of crime, and is a strong plea for the study of crime and criminals from the medical standpoint. These essays abound with original thought, clearly defined ideas, and trenchant expressions of them.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., etc., Assistant Physician to the Edinburgh Royal Infirmary, etc. Volume I, Part III. Edinburgh: T. and A. Constable. University Press.

The third part of this excellent atlas has just appeared. It equals, if indeed it does not excel, the preceding two numbers. It is doing in medicine what Jonathan Hutchinson has so long, and so well, been doing in surgery.

This part deals with *Progressive Unilateral Atrophy of the Face*, with clinical investigation of the subject, with superior illustrations accompanying.

Chronic Progressive Bulbar Paralysis, with clinical investigation, and plates illustrating it, with the appearance of the tongue in that affection.

Ophthalmoplegia, with investigation and plates illustrating the condition, and also appearance after recovery.

Molluscum Fibrosum, clinical investigation and illustrative plates.

Xeroderma Pigmentosum, investigated. and illustrated with three plates.

The text of the work is much more than ordinarily satisfactory, and each part, as it appears, makes the possessor of it more anxious to have the succeeding numbers. The work is eminently useful to all practitioners, but it is especially valuable to teachers of medicine.

TRANSACTIONS OF THE FORTY-SIXTH ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY. Printed for the Society. Toledo. 1891.

This volume contains the cream of the contributed papers and discussions for the last annual session of the Ohio State Medical Society, held at Sandusky, in the month of June, 1891. An interesting paper on the "A. C. E. Mixture" used as an anæsthetic, instead of chloroform, was read by Dr. J. C. Reeve, of Dayton. From it and from the remarks of members, it was shown that this mixture has been a strong favorite among the surgeons of that State. One speaker, Dr. Thorne, stated that he had used it in about five thousand anæsthesias, without any fatalities. Dr. Reeve stated that he had been able to find not more than four fatalities from the use of A. C. E., after an examination of the periodical literature of the decade ending in 1890. The Presidential Address, by Dr. W. J. Conklin, of Dayton, was entitled "A Page of Medical History," and consisted of a sketch of Molière and his times. According to the study given to the question by Dr. Conklin, Molière was not inimical to the medical art in an especial manner. It is true, he said bitter things concerning the medical characters which he put upon the stage, but he did the same in respect to other types and bodies of men. Molière's genius was for satire, and it was that also which sustained him at the royal court; so that he ventured to cast his shafts of ridicule at every vulnerable or pretentious object that seemed amenable to his dramatic purposes. The foibles of Paris, under Louis XIV., have the honor of being immortalized in the comedies of the greatest dramatist of his age; medical foibles not less and not more than some others. A good phototype presentment of Dr. Conklin adorns the volume.

Of the other contents of the book, we desire to mention an article on appendicitis, by Dr. Harvey Reed, of Mansfield; one on the diagnosis of abdominal tumors, by Dr. T. A. Reamy, of Cincinnati; one on the home treatment of acute insanity, by Dr. A. B. Richardson; and one on the radical cure of hernia by the buried animal suture, by Dr. F. C. Larimore, of Mt. Vernon. The proceedings contain a set of condemnatory resolutions against the facile establishment of "mushroom" medical schools; specifying those that are formed in little towns, which have no hospitals and no adequate clinical opportunities, as being unworthy of the sanction of the profession. Another resolution, which was referred to the Committee on Ethics, mentions by name and with disfavor the so-called medical department which had recently been opened at the "National Normal University of Lebanon, Ohio." We find in the London *Medical Press* an item, interesting to the Ohio State Society, which refers to the alleged sale of medical diplomas by an enterprise called "The Medical University of Ohio," a name that is dangerously like that of an older and more reputable institution. These indications of the status of medical legislation in Ohio merit the thoughtful attention of her influential citizens.

NECROLOGY.

THE COMMITTEE ON NECROLOGY.

The attention of members of this Committee is called to the desirability of their furnishing this office with brief reports of all the deaths of members of the Association in their several States.

Death of Dr. John Cunningham in His One Hundreth Year, January 21st, 1892.

Many of the older residents of Wooster and Wayne county for the past few months have looked forward with considerable interest to the time when our oldest citizen, Dr. John Cunningham, should celebrate his one hundredth birthday, and had already made some arrangements toward holding a public celebration on Feb. 19th, when he would have rounded out the century mark in his life.

Dr. Cunningham was born in Washington county, Pa., Feb. 10th, 1792. He graduated at Washington college in his native city, and read medicine in the office of Dr. S. Murdock. Here he remained for three years, excepting the time he spent in attending the Jefferson Medical College, Philadelphia, from which institution he graduated, and was at the time of his death the oldest alumnus of that famous college. He came to Wooster and Wayne county in 1827, arriving here on the 5th day of July, having made the journey on horseback. He practiced his profession in Wooster a few months when he located in Jeromeville, which was then in Wayne county, and continued in practice at that place. On March 20th, 1830, he was wedded to Miss Maria Stibbs Beall, a daughter of Gen. Reasin Beall. Some years after his marriage he moved back to Washington, Pa., where he successfully followed his professional calling until 1848, when he came back to Wooster and again began the practice of his profession. His wife died in Washington, Pa., June 20th, 1846, of typhoid fever. Their union was blessed with four children, all of whom are living, viz.: Theodore Cunningham and Miss Libbie Cunningham, of this city; and Mrs. D. B. Olliver, of Pittsburg, and Cushman Cunningham, of Klamath, Oregon. He united with the church in early life and became a member of the Presbyterian congregation at Wooster on making this place his home and continued his relationship with the church through life. He was a man of more than ordinary intelligence, an affable, genial and kind neighbor, a Christian gentleman of sterling worth and character, blessed with those qualities of mind and heart that made his companionship and friendship, a pleasure.

He had not practiced his profession for over thirty-six years. When he came to Wooster there was but one house in the city, east of the house now occupied by Ex-Sheriff Messmore. This was a boarding house. He was always a fluent talker, and only a few months ago when on a visit to his daughter in Pittsburg, he related to a reporter that in June, 1813, himself and three companions started on a trip to the lakes. He said, "we crossed the Allegheny river on a flat and proceeded to Erie, passing through Harmony. There were only two houses in Allegheny at that time. When we arrived at Erie, Commodore Perry's fleet was at anchor. We were invited aboard the St. Lawrence, where we had a pleasant talk with the distinguished commander. The famous battle did not occur until Sept. 10th, 1813, shortly after we had left Erie. I was one of the first graduates of Jefferson College. My father, Alexander Cunningham, was a Scotch Irishman. He settled in Washington county, Pa., shortly after the Revolution. My grandfather, Thomas Scott, was a member of the first Congress, and was also the first Prothonotary (auditor) of Washington county. He was an intimate friend of General Washington. I have four children living and seventeen grand-children."

Henry Ingersoll Bowditch, A.M., M.D., LL.D., President.—The venerable President of the Association in 1877 has departed these scenes of action and accomplishment at the ripe age of 84. He was a native of Salem, Mass., having been born there August 9, 1808. His father was Nathaniel Bowditch, the eminent mathematician and translator of the "Mechanique Celeste." His preparatory schooling was received at Salem and Boston, and he entered Harvard College at the age of 16. He was graduated with honors in the class of 1828, and four years later from the medical of the same institution. He studied in Paris for two years, after which time he took up his residence in Boston. He was appointed Jacksonian Professor of Clinical Medicine in the University in 1859, continuing in that office until 1867. In 1862, as Anniversary Orator of the State Medical Society, he prepared a discourse on the topographical distribution and local origin of consumption in Massachusetts. This paper has become an American classic in the libraries of sanitarians the world over, standing in many of those libraries side by side with the valuable report of Dr. George Buchanan, of the English Local Government Board; both documents having been the outcome of a laborious and an entirely independent research into the causative relation of soil-moisture to consumption. From this time forth questions of sanitation and public medicine occupied largely the time and thought of Dr. Bowditch. He added strength to the efforts that were made year after year to secure a State Board of Health for his commonwealth. Finally, in 1869, the pioneer Board was established with Dr. Bowditch at its head, a position which was occupied honorably and usefully for ten years. His labors, aided by those of enthusiastic sanitarians like Drs. Derby, Draper, Folsom, and a few lay members, tended to convince other States in the Union and the world at large that legislation on behalf of preventive medicine had become a live modern institution. Other States gradually followed the example of Massachusetts, and a wide-spread interest manifested itself in large and small communities about the necessity and value of hygienic organizations. In 1876 Dr. Bowditch delivered an important address before the International Medical Congress, held at Philadelphia, in which he sketched the progress of public hygiene and its resultant, State preventive medicine, from the standpoint of an observer looking back over the centennial period then closing. In that address he claimed that more practical work had been done among the people, during the ten years then ending, with the intention to prevent and crush out disease, and more publications illustrative of public hygiene had been given forth the world over, than since the Christian era began. He also dwelt with commendatory emphasis upon the part taken by the American Medical Association in helping forward the cause of sanitary science and in endeavoring to obtain a national health organization from the Federal Government.

In 1879, the National Board of Health was authorized by Congress, and Dr. Bowditch was one of ten medical commissioners appointed by the President. But this board did not prosper, not being liberally sustained by Congress, thus verifying the prediction made by Dr. Bowditch in 1875, when as chairman of the Section of State Medicine, he stated that the prerequisite to an efficient National Health Council must be the establishment of State Boards in all, or a large proportion, of the States of the Union. It may well be doubted whether this land will ever have its grand National Department of Health on any other basis than that insisted upon by Dr. Bowditch, namely, that it shall be a kind of central bureau constituted from a universal system of State councils; one other consideration may at some time bring a strong national body into being for the prevention of impending pestilential disease. The questions of sanitary science that most deeply interested Dr. Bowditch, in addition to consumption in its topographical relations, were the housing of the poor, lodging houses in cities, the abuse of intoxicants, the management of inebriates in asylums and otherwise, and domiciliary and personal hygiene; and these are some of the subjects of his contributions to the annual reports of his State Board. Dr. Bowditch was a great admirer of Louis, having studied under the latter during his post-graduate course at Paris. They two became correspondents, and Bowditch translated, by authority of their author, Louis' Researches on Phthisis, the Memoirs on Clinical Instruction, and Observations on Gastro-enteritis. Dr. Bowditch gave special attention to thoracic diseases, and endeavored to revive the operation of thoracentesis for the treatment of plural effusions. He was a philanthropist in the fullest Bostonian sense of the term. He joined forces with Wendell Phillips and Garrison in the work of breaking down slavery, and he was singled out to be named "the anti-slavery fighter," a title which he afterwards said that he held to be the proudest one he could ever hold during his life. He was for several years an attending physician at the State General Hospital and the City Hospital, and was also on the consultant staff of the Carney and the New England Hospital for Women and Children. During the War he was surgeon of enrollment. He was a constant champion for the admission of women to the advantages of a thorough medical education. He was active in organized social and scientific work and an honorary member of numerous societies abroad as well as at home. It is said of him that his fondness for young people led him into their company, and to exert himself for their amusement. This was his chief relaxation, together with the meetings of the "Thursday Evening Club" of which Holmes, Longfellow and other wits and poets were members. Before the time of his death, Dr. Dowditch was spoken of as the oldest physician of Boston, and he was certainly in the front rank of the veterans, having passed more than half a century in the profession. The fineness of his feeling toward his life-work and toward his fellow workers may be judged from some words of his own—written in 1862—changed in a few points so that they may be read as applicable to himself: "He has filled with honor the sacred office of family physician. He needs no higher or sweeter eulogium; for that office worthily filled carries within itself as rare a combination of virtues possessed and of duties done as usually falls to the lot of man." Few more worthily have filled their parts, few more willing hands than his have eased their brothers' load, and none more sure of the recompense of which his friend the poet says:

> "These gracious words are welcome, our reward,
> Ye served your brothers; ye have served your Lord."

Dr. Daniel Ayers of Brooklyn, died January 18, aged 69 years. He was a graduate of Princeton and of the New York University. He settled in Brooklyn in 1845 and acquired a surgical fame and fortune therefrom in a short time. He retired after forty years of remarkable activity, and began to dispense gifts to such institutions as the Wesleyan University, the Long Island College Hospital and the Hoagland Laboratory. His benefactions to the University just named are estimated to exceed $250,000. He assisted in founding the Brooklyn City Hospital, he was associated with Dr. Louis Bauer, who went to St. Louis afterwards, in a kind of post-graduate surgical clinic which was the scene of some pioneer joint surgery in the United States. He was chosen emeritus professor of surgical pathology in the Long Island College Hospital in 1874, and delivered courses of lectures most elaborately illustrated by specimens and artistic models, in the making of which practice had made him expert. Two sons, Drs. Morgan Ayres and Messenger Ayres succeed him.

MISCELLANY.

REPORT OF WORLD'S FAIR ENTERTAINMENT OF THE MEDICAL PROFESSION OF CHICAGO.—On January 9th, the committees appointed by the Chicago Medical Society, the Practitioners Club, the Pathological Society, the Gynæcological Society, the Medico-Legal Society, the South Side Medical Club and the Scandinavian Medical Society, all of Chicago, were called together in joint meeting at the Sherman House. These several committees had been appointed by their respective societies to consider and act in the matter of extending courtesy and hospitality on the part of the local profession to the visiting confraternity from this country and abroad, during the World's Columbian Exposition in 1893.

After a general discussion under the temporary chairmanship of Dr. A. E. Hoadley, Dr. Chas. Warrington Earle was formally and unanimously elected permanent President and Dr. Archibald Church, Secretary.

The objects to be attained were then generally discussed, and may be formulated as follows:

The opinion was common, that the profession of Chicago should extend general courtesies, and in some instances special hospitality, to members of the fraternity visiting Chicago in 1893, during the continuance of the World's Fair: That this could be fairly well done by opening and maintaining a Medical Headquarters, to be used as a point of rendezvous, as a bureau of information and as a general utility point for professional visitors, in the way of receiving mail, writing letters, leaving addresses, and otherwise as might appear necessary or expedient. In the case of distinguished members of the profession, when thought desirable by the General Committee, banquets, receptions or informal dinners might be given, under such regulations and by such means as may be hereafter fixed upon.

To these ends it was thought that the various medical organizations contributing to the formation of the General Committee should be asked to give support and to lend assistance as it might be needed, or found advisable, and that the societies should be asked to name Permanent Committees to act on the General Committee, the Chairman of such respective committees to be ex-officio permanent Vice-Presidents of the central body.

It was suggested, and generally agreed, that Secretaries familiar with the various foreign languages should be appointed to correspond with medical organizations and publications abroad, to the end that the members of the profession contemplating a visit to Chicago might be informed of the Headquarters and other medical points of interest in Chicago.

Dr. Cook moved the appointment of a committee to interview the World's Fair Officers, and request at their hands a place for a branch Headquarters on the Fair Grounds, and such other accommodations as might be needed in the carrying out of the purposes of the General Committee. The Chair appointed as such committee, Drs. Cook, Owens and Hoadley, and requested a report at the next meeting.

On motion, an adjournment for one week to Saturday 16th, at 8:00 P.M., was effected.

At the adjourned meeting of January 16th, Dr. C. W. Earle presiding, Dr. John E. Owens outlined the present status of the Medical Bureau of the Columbian Expbsition. as officially organized, and the purpose of its management during the World's Fair, showing that it in no way contemplated a "exhibit" or of meeting the objects of the General Committee of Entertainment.

Dr. Cook reported that his committee had seen Directo General Davis, and received the assurance of his support an encouragement that space might be secured for the needs o the General Committee, in some building on the Fai Grounds.

The report was accepted and the committee continued.

Upon motion, it was decided that the proceedings of th meetings thus far held should be printed, and reported bac to each medical society by their respective representative with the request that such or similar committees be mad permanent, and authorized to proceed with the work outlined, and that, when this shall have been done, the Genera Committee should again meet upon proper notice.

ARCHIBALD CHURCH, M.D., Secretary.

NEW YORK COUNTY MEDICAL ASSOCIATION.—At the annua meeting of this Association, held January 18, 1892, the following officers were elected: President—S. B. Wylie McLeod, M.D.; Vice-President—William T. White, M.D.; Recording Secretary—P. Brynberg Porter, M.D.; Correspondin and Statistical Secretary—Augustus D. Ruggles, M.D.; Treasurer—John H. Hinton, M.D.; Member of the Executive Committee—Beverhout Thompson, M.D.

MR. A. M. UNGER, a student of the P. and S., Chicago, was fined $100 for practicing medicine without a license January 20, by Justice Everett. The young man admitted his guilt paid his fine, and promised not to do so again.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 16, 1892, to January 22, 1892.

Capt. Louis Brechemin, Asst. Surgeon U. S. A., will proceed without delay from the Presidio of San Francisco, Cal., to Vancouver Bks., Washington, and report in person to the commanding officer of that post for temporary duty.

Capt. Aaron H. Appel, Asst. Surgeon U. S. A., is relieved from duty at Ft. D. A. Russell, Wyo., and will report in perso to the commanding officer, Ft. Buford, N. D., relieving Firs Lieut. Julian M. Cabell, Asst. Surgeon, who will then report in person for duty at Ft. D. A. Russell, Wyo.

Major Robert M. O'Reilly, Asst. Surgeon U. S. A. (Ft. Logan, Col.), is granted leave of absence for twenty-one days.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending January 23, 1892.

Surgeon W. G. Farwell, detached from Naval Hospital, Norfolk, and wait orders.

P. A. Surgeon Drake, ordered to the Naval Hospital, Chelsea, Mass.

P. A. Surgeon George McC. Pickrell, detached from Naval Hospital, Chelsea, and to Naval Hospital, Norfolk.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending January 16, 1892.

Surgeon Fairfax Irwin, granted leave of absence for seven days. January 13, 1892.

P. A. Surgeon. H. R. Carter, to proceed to Cincinnati, O., and assume command of the Service. January 8, 1892.

P. A. Surgeon S. D. Brooks, to inspect unserviceable property at Marine-Hospital, Detroit, Mich. December 23, 1891.

P. A. Surgeon L. L. Williams, granted leave of absence for twenty days. January 12 and 13, 1892.

P. A. Surgeon W. J. Pettus, to proceed to Buffalo, N. Y., and assume command of the Service. December 21, 1891.

P. A. Surgeon G. M. Magruder, relieved from duty at Washington, D. C.; ordered to Marine-Hospital, New Orleans, La. January 8, 1892.

P. A. Surgeon T. B. Perry, to proceed to Cape Charles Quarantine for temporary duty. January 13, 1892.

DEATH.

Surgeon W. H. Long, died at Cincinnati, O., January 5, 1892.

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ORIGINAL ARTICLES.

ORIGIN AND DEVELOPMENT OF MODERN GYNECOLOGY.

The President's Address, Delivered at the Annual Meeting of the Gynecological Society of Boston, January 14, 1892.

BY AUGUSTUS P. CLARKE, A.M., M.D.,
OF CAMBRIDGE, MASS.

The ancients seem to have acquired much knowledge relative to the treatment of diseases peculiar to women. The early Greek physicians recognized the nature and importance of prolapsus uteri as well as many of the disturbing factors of menstruation. Mention in their writings is made of a fluor albus. The Greeks devoted much time to the consideration of what so long had been denominated "ulceration of the uterus." They speculated much on what should be the dimensions and position of the normal uterus; they understood, to a considerable extent, many of the more serious forms of dystocia. Their ideas of the various forms of uterine version were not unworthy of their genius. Many forms of malignant disease were observed by them. Some of the causes of sterility appear in their writings. Prominent among these, was the preternatural contraction of the uterine canal. Some forms of periuterine and pelvic abscess were also known to them. These, for the most part, were believed to be limited to the os, and to the cervix uteri. The treatment employed for many of these lesions, morbid processes and peculiar conditions, was complex, and often fanciful, if not whimsical. It is useless, however, to attribute to the ancients advances in gynecology which they had not made. High tribute for many achievements, which people in early ages are supposed to have accomplished is often paid by writers through overstrained appreciation. From a more critical examination of the writings of the ancients, it becomes evident that no very important surgical measures in gynecology were undertaken. Indeed, we might say that nothing of consequence in this direction was achieved when comparison is made with recent successes. The long night of ignorance and superstition, which prevailed in Europe, checked the growth and extension of the arts generally. Growth of sentiment in favor of medicine and surgery, suffered in common with that pertaining to every other art during this period, though many of the rulers at that time were in some respects liberal and accomplished princes. The time at last came when imperial edicts could no longer hold in chains that spirit, which in humanity gives birth to progress. In 1514 Vesalius was born at Brussels. He proved to be the most eminent anatomist of the sixteenth century. His great work on the structure of the human body has aptly been compared to the discovery of a new world. Vesalius did not rest altogether on beds of roses, for in controverting some of the errors in the doctrines of Galen, he incurred reproaches and brought upon himself violent hostilities from several anatomists of his time. All this led to healthful exercise, and stimulated others to more careful dissection and study of the human organism.

The wars in which the different nations of Europe were often engaged, did much toward opening the way for greater knowledge in surgical measures. Baron Larrey, who accompanied Bonaparte to Egypt, and who also served at Waterloo and at other battles, was among the early contributors to surgical advancement. The "Treatise on Gun-shot Wounds," by G. J. Guthrie, at the termination of the wars in Spain, Portugal, France, and the Netherlands, in 1814 and 1815, did much toward opening the way for a more rational practice. Prominent among the results of military engagements were those furnished by the Kaffre wars, and by the battle of Salamanca, and by the engagements at Cawnpore in Hindoostan. The results of the battle of Solferino were still more important. At this battle, according to some accounts, in one day 11,500 French, 21,000 Austrians, and 5,300 Sardinians were wounded and taken from the field. Those of us who participated in the Civil War of our own country, know that the results far surpass all others for help in surgical knowledge. The Franco-Prussian and other wars of still more recent date, have yielded much for consideration on the part of the surgeon. The discovery of the use of anæsthetics in 1846, in Boston, has universally become a priceless boon for suffering humanity. The encouragement which the arts have received has led to countless improvements in the construction of surgical instruments, apparatus and in the preparation of dressings. Notwithstanding all these helps, with the light afforded by the extended opportunities for surgical advancement, development and progress in gynecological procedures were for a long time slow and uncertain. The successful results as first obtained in the ovariotomy cases undertaken by McDowell, of Kentucky, and by others at a somewhat later date, even though some apparent recoveries followed, were not sufficiently great to impress the more conservative surgeons that such operations at that stage of our knowledge were justifiable measures. The occasional or the few recoveries occurring after such operations were looked upon perhaps, more in the light of what the human organism, under certain circumstances, could endure, than as indications of what should have been undertaken for an attempt at radical cure or for relief. Now that laparotomy, when undertaken with all modern equipments and under the strictest precautions, has become a recognized measure of treatment for various lesions and diseases affords no justification for those, who, at first, persistently continued in the work without the necessary preparation for the trying emergencies which so often arose, even though some apparent recoveries followed. It is not those who first enter the ranks, but those who go into battle all prepared for the best service, we should most delight to honor. The most important advance in the progress of gynecology has been the more general recognition of the influence of bacteria in the production of certain morbid processes. The recognition of the agency of microörganisms in causing septicæmia, and diseases of kindred nature, has effected an entire change in the various methods of treatment, and has been productive of results in surgical operations more brilliant than have been found before recorded in the history of our art. The importance of this fact was slow in gaining acknowledgement; most surgeons were inclined to regard the presence of bacteria connected with the pathological changes rather as the result, than as the original cause of morbid processes. The old systems of operative surgery were too strongly entrenched to be dislodged by the bare thought of the presence of an unseen foe. There had been developed along with the surgical art, a tendency toward mannerisms. The brilliant display in the large amphitheatre of a hospital had its fascinations which were felt no less by the masters of surgery than by the crowding spectators. These feats of surgical process could not be relinquished at the first onset made by what was termed "the new fledged theorists." The new system, however, had come to stay, though minor details in method are subject to change. The patient workers in quiet retreat, and in an atmosphere uncontaminated, and made aseptic, were able to show results that could not be gainsaid. It matters but little whether the carbolized spray with complicated dressings, or the irrigator with preparations of bichloride is employed so long as special precautions are carried out to prevent contamination of the incised tissues. Different antiseptic agents and the manner of the application of each may present results which are not altogether alike, but the general effect will always favor the adoption of some precautionary methods against the occurrence of sepsis. It is an undoubted fact that with surgeons in lesser matters of detail, there has never been an entire unity of proceeding. This apparent difference in what may be termed the exemplification of the technique, is owing, no doubt, to the various degrees in appreciation on the part of the individual surgeon of the importance attaching to each of the several steps to be taken in any special method proposed. Some operators work largely under the influence of mechanical intuition, while others, acting from a general comprehension of what should be done, will not limit their sphere of action by observing formulated methods; they are inclined more to rely upon their original resources to meet casual emergencies. It is claimed by some operators that in their practice, results in laparotomy without the employment of antiseptics have been as favorable as in those cases in which their use has been adopted. In answer to this it may be said that much, no doubt, depends on the manner of operating. Those who enjoin the strictest measures for general cleanliness, and are exceedingly expert in operating, and who maintain the strength of the patient against the influence of shock, may succeed because the exposure of the patient is reduced to a minimum. It cannot be denied that the tissues in the living organism are, to a great degree, antagonistic to the action of bacteria. It is only after the vital fluids have become overwhelmed by the presence of such germs, or when they have become peculiarly sensitive to their action that the chief danger is to be apprehended. But this is no argument against the use of antiseptics, or why the potency of the virus of the invading bacteria should not be attenuated. It is always wiser to take every precaution when convenient, than to assume that the subtle fluids of nature are in her direst extremity alone sufficient for preserving her integrity. This leads to the consideration of another point which is of much practical importance.

While it is desirable, in all important gynecological operations, to keep the wound aseptic, it is also absolutely necessary to be on the watch, lest the strength of the agent employed be so great as to weaken the resisting power of the tissues against the action of the microörganisms. Sir Joseph Lister, in his contribution on the present position of antiseptic surgery, before the Tenth International Medical Congress, at Berlin, makes mention of what he had stated at the London Congress, that normal blood and serum, and even pus, were by no means favorable soils for the growth of microbes in the form in which they are present in the air. As regards the spray, Sir Joseph remarked that he felt ashamed that he should ever have recommended it for the purpose of destroying the microbes in the air. He further says, that if we watch the formation of the spray, and observe how its narrow initial cone expands as it advances, with fresh portions of air continually drawn into its vortex, we shall see that many of the microbes in it, having only just come under its influence, cannot possibly have been deprived of their vitality. Yet there was a time, he says, when he assumed that such was the case; and, trusting to the spray implicitly, as an atmosphere free from living organisms, omitted various precautions which he had before supposed to be essential. Such a confession of being misled seems hardly necessary to have been made; for, on reflection, it must be admitted that the employment of the spray could never have been otherwise than beneficial. For the foreign substances in the air, which bear the disease germs, coming in contact with the elements of the spray, are in large degree prevented from gaining admission into the wound. The constant wetting down of the foreign material containing the germs, I had, for some time before the use of the spray was discontinued, come to believe was the true secret of success. By this means the germs, if not destroyed altogether, were in large measure rendered *hors de combat*. Another interesting feature brought out in Sir Joseph's paper, is the reference to the results of Metchnikoff's experiments in regard to intercellular digestion in the amœboid cells. By these experiments it has been found that these migratory cells, with whose amœboid movements we have long been familiar, feed also like amœbæ, and, while almost omnivorous in their appetite, have a special fondness for bacteria, taking the bacteria into their protoplasmic substance and digesting them, thus preventing their indefinite propagation among the tissues. The cells which exercise this devouring function, Metchnikoff, according to Lister, termed phagocytes. In the experiments referred to, spores of anthrax were introduced under the skin of the green frog; these were destroyed by the phagocytic action of the leucocytes. When, however, the leucocytes were excluded from penetrating the animal's lymph, the spores sprouted and grew into luxuriant threads of anthrax in the lymph. The results of other experiments are mentioned, favorable to the adoption of the phagocytic theory. Respecting the use of sutures, the author says we can understand that the leucocytes may creep into the intervals between the fibres of a silk thread, and destroy any microbes that may have lodged there before they have had time to develop serious septic mischief. But there must surely be a limit to the thickness of the threads. No one, he imagined, would feel justified in leaving in the peritoneal cavity an unsterilized cord as thick as a finger. The author says it would be wise to sterilize even so slender a cord as $\frac{1}{30}$ of an inch, which Mr. Bantock, of London, uses for tying the pedicle of the tumor. Who can say, continues the author, that septic mischief may not occasionally lurk in the ligature in a form which may baffle the phagocytes? The extended investigations made regarding microörganisms have been productive of important achievements.

I have been asked why it did not occur at the time to some of us who had extended experience in the late war, 1861–65, that the remarkable and speedy recoveries after operations for severe injuries of the abdominal organs, and of other parts of the body, were due to the direct influence of the agents employed, as now embraced under the term antiseptics. In answer to this I am able to state, from personal experience and observation while in the service, with the rank of assistant surgeon and surgeon-in-chief of the First Division of Cavalry in the Army of the Potomac, and of the Army of the Shenandoah, that many of the medical officers did recognize the connection between such speedy recoveries and the agents employed. Hydrargyri chlor. mitis, and also solutions of hydrarg. bichlor. corrosivi, were known to be efficient in destroying maggots appearing in wounds. These agents were employed in modifying and in preventing altogether the occurrence of suppuration. So also was the liquor sodæ chlorinatæ, and the liquor zinci chloridi. All these, as well as other agents issued among the medical supplies, were often employed for preserving bodies for dissection, for embalming, for lessening suppuration and for overcoming it altogether. The solution of zinc was also used for washing and cleansing sponges and surgical instruments. I should further state that the medical officers of the army always recognized the fact that unhealthful surroundings were favorable to the production of a pus-generating atmosphere. Hence the frequent employment of the various disinfectants for correcting and preventing such conditions. When one, therefore, comes to consider the subject more carefully, it will appear that our knowledge of the agency of microörganisms in the production of suppurative processes comprised about all that Mr. Lister demonstrated when he began the work of his remarkable career. When Mr. Lister, however, came to recognize the influence such extraneous factors had over the condition of the parts after surgical operations, he seemed determined to crystallize that knowledge, and to formulate rules for attempting its broader application. It appears that Prof. Lister founded his theory on what was termed the researches of M. Pasteur. This theory embraced the idea that the septic properties of the atmosphere were owing not to the oxygen, or to other gaseous elements, but to minute organisms everywhere suspended in the air; that the power of the microörganisms was due to their vitality, that the decomposition occurring in the injured parts might be prevented by applying as a dressing some material capable of overcoming the energy of the floating particles. The agent which Prof. Lister used was carbolic acid. The publication of his papers on this subject first appeared in 1867. In 1863, a work on this subject was published by Dr. Lemaire, of Paris. This author had entered very thoroughly and scientifically into the consideration of the septic action of infusorial germs suspended in the air; he had discussed the theories of Schultze, Schwann, Pouchet, Helmholtz, Bernard, and of other investigators. Dr. Lemaire had used carbolic acid in many conditions requiring surgical and other measures for relief. Déclat, Küchenmeister and others, had paid much attention to the subject, before the publication of Mr. Lister's views. (See London *Lancet*, 1867; also Braithwaite's Retrospect, Vol. lvi.)

Another subject which has been coming more and more important is the treatment of uterine myomata. The exhausting hæmorrhage which so often attends the presence of large fibroids renders a resort to surgical interference necessary. Removal of the uterine appendages, and especially the Fallopian tubes, if it does not fully control hæmorrhage, lessens the tendency to it. The operation for the removal of the tubes not only gives relief, but effectually overcomes all suffering and effects a permanent cure. We cannot always tell whether this occurs as the result of cutting off the blood supply through the removal of the appendages, or as an interruption of the menstrual phenomena, or through excision and loss of the nerve tissue. Pyosalpinx and salpingo-ovaritis are affections for resort to laparotomy. In all such cases the diseased tubes and ovaries should be removed. Sometimes the pus does not escape through the distal extremity of the tube, but dilates its canal; it may open into the uterine tissue and give rise to pelvic complications. This will often be evidenced by abscesses recurring at irregular intervals and discharging through Douglas's cul-de-sac and through the vaginal fornix.

The presence of such a condition is always to be deplored; it can safely and permanently be cured only by a resort to laparotomy. Another condition connected with the Fallopian tubes worthy of the highest consideration is that occurring in cases in which the septic material escapes through the abdominal extremity of a patulous canal. The occurrence of this condition almost invariably gives rise to more or less general peritonitis; this will endanger the life of the patient unless speedily relieved by operative interference. All are glad to realize that the progress in gynecology has advanced beyond the mere routine practice of attempting to correct uterine version or laceration of the cervix and perineum; that happier days can be anticipated by those women who, having contracted matrimony and having become pregnant, find that they are subjects of deformity of the pelvis. The brilliant achievements in abdominal surgery give assurance that Cæsarian section is not only a legitimate operation, but one almost entirely free from danger; also, that the tragic scenes heretofore witnessed in certain cases in which embryotomy was resorted to may be relegated to history. The progress made in gynecology has reduced to a minimum the horrors attendant on extra-uterine fœtation.

The recent achievements in gynecology have made full returns for what it received from other branches of the surgical art. By the advances made in abdominal section the surgeon of to-day is enabled to operate and even to cure a large class of cases comprising every variety of hernia. Diseases of the appendix vermiformis are no longer the approbium of medicine. Cases of intestinal obstruction can often be treated successfully by surgical interference. The military surgeon is now profiting by the experience gained in our department. Penetrating wounds of the abdomen implicating the colon, small intestine, stomach, bladder, or other viscus or organ, can now be successfully treated by abdominal section. In regard to the treatment of cancerous disease of the uterus it seems scarcely necessary for me to say that some improvement has been made. The method of total extirpation of that organ, carried out as I witnessed it performed by Prof. A. Martin, of Berlin, is undoubtedly the best that has heretofore been devised. Published statistics on this subject I am persuaded would fully justify the general adoption of this method of proceeding. It must be conceded, however, that our knowledge of cancer in its various manifestations is as yet in its elementary stage.

Another subject which has taken on much interest in gynecological circles is the treatment by electricity. Much has been accomplished by the judicious use of Faradism. Excellent results have been reported when this form of electricity has been used singly, and also in connection with galvanism. That form of electricity which has been of the most absorbing interest is that of electrolysis. The splendid results reported by Apostoli, of Paris, and by his followers, as obtained by this method of treatment in chronic metritis, intra-uterine polypi, hæmatocele, certain uterine fibroids, and other affections connected with the genetalia and pelvic organs should not be overlooked.

Without entering into any extended consideration as to the value of such method when placed in comparison with more radical measures, I cannot refrain from remarking that the credit of originating this method of treatment by electrolysis rightfully belongs to a member of this society. Our associate, Dr. Ephraim Cutter, was evidently the first in the field. By his ingenuity, skill, and rare courage he succeeded in perfecting a method and in carrying it out successfully in the treatment of uterine fibroids. His success in this direction should be a lasting honor to his name.

In conclusion, I would say that the Gynecological Society of Boston should feel that it has good reason for congratulation, for it is now twenty-three years since it was founded and took up the work with noble purpose. At the time of its organization gynecology was in all the schools an unrecognized department of medical science. Its presence here in Boston, the metropolis of New England, was regarded as an innovation. It would, indeed, have been surprising had not some opposition been directed toward its work and its methods. Its membership originally was limited to a few, and no one was able to gain entrance who did not give promise of becoming an active worker and a fit representative of the art. Its Secretary,[1] fresh from extended opportunities abroad, and from the discipleship of the renowned Simpson, of Edinburgh, became a power for directing and accomplishing work. He was an exponent in the principles and methods of practice that was scarcely equalled by any gynecologist found in this or other lands. That the society was able to carry on its work and to cause its influence far and wide to be felt, the several volumes of its transactions in its first series are its abiding witnesses. The subjects brought forward for consideration have been numerous and important. Eminent gynecologists in this and in other countries have made frequent reference to these interesting pages. Our society has kept abreast with the times and with the progress everywhere made in medical science. Our doors are now open to every one who has made a record and has given evidence of a desire to advance along the lines we have established for our work. Prominent medical gentlemen in this and other places, after seeing the importance of the work this society has had before it, have profited by our undertaking. They have established new societies, whose objects have been to promote interest in work like that in which we have been engaged. Foremost among such societies organized is the American Gynecological Society; also one of recent date is the American Association of Obstetricians and Gynecologists; others also have been founded. Not the least among such distinguished bodies is the Gynecological Society of Chicago, and also that of Detroit. The Section of Obstetrics and Diseases of Women connected with the American Medical Association is now fortunate in having so far succeeded in accomplishing much good work. An awakened interest for this kind of work is felt in Great Britain, Germany, and in other countries. If, however, some of these younger societies are rivalling us in advances into the darkness beyond, it will not work to our detriment; it will only show that the work of our society was wisely undertaken, and that the founders built far better than they knew.

NOTES ON YELLOW FEVER.

BY GEORGE F. CENTER, M.D., A.M.,

OF JACKSONVILLE, FLA.

Yellow fever is thought to be a microbic disease, and to depend upon the chemical products of these microörganisms for its deleterious action upon man. It is a fact that these microbes and their products cannot be destroyed while in man by any known drug, nor can their ptomaines be neutralized while in the organism by any chemical not primarily destructive to man. In the absence of any known specific for yellow fever, to my own knowledge and experience it is evident that the best curative results are obtained by a depurative eliminative treatment, acting through the skin, bowels, and kidneys.

Our epidemic at Jacksonville in 1888 was an exact repetition of the New Orleans epidemic of 1867. In both there were sporadic cases in the early spring; the types were generally mild; the fever was most sweeping, including the negroes, who are generally exempt. One attack here in 1877, and in New Orleans in 1853, did not exempt even natives from attack, while relapses were common in both epidemics. The exact cause of yellow fever is still a subject of investigation; however, Dr. Paul Gibier, the French savant and accredited representative of the French Government, while here in 1888 discovered a microbe in the intestines which may be the true cause. Apropos, Dr. G. kindly presented me with an "old culture" microscopic slide, which I often place upon my microscopic stand and wonder how so diminutive an object can produce such devastation among the king of mammals. There were *about fifty physicians here* treating yellow fever during this epidemic of 1888, and they reported about 4,705 cases to our Board of Health. There were about 412 deaths, hence death rate nearly 10 per cent. I have, in a book kept for that purpose, a daily record, giving name and residence of 594 genuine cases of yellow fever treated by me and reported to our Board of Health prior to and including the sixty-eight days in which I was connected with the "Bureau of Medical Aid," and of this vast number, which was about one-eighth of all the cases of yellow fever in Duval county, I reported for record a death rate of less than 2 per cent. I make this statement to show the great advantage of eliminative treatment over the neutralization treatment which was here in general use by physicians during our late epidemic.

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[1] Dr. Horatio Robinson Storer.

The peculiarities of yellow fever, as contradistinguished from all other fever, is shown in the eye, pulse, temperature, and generally it has a nocturnal invasion. There is a peculiar appearance of the ocular conjunctiva, so characteristic that when once carefully noted will lead to a correct diagnosis of yellow fever without the necessity of examining for other symptoms. The upper ocular conjunctiva remains normal; the lower half is a reddish-yellow hyperæmia, slightly œdematous. This division of the eye at the palpebral fissure is so very marked that, when in doubt, raising the eyelids and a careful examination of the eyeball is all that one needs do to differentiate yellow from other fevers. The pulse is very slow, and the temperature rarely reaches 104° F. Take for example my case No. 526. He took a chill at 11 p.m., November 6, 1888. The upper half of the eyeball normal; lower, reddish-yellow and hyperæmic; face puffed; urine dark-brown, thick, scanty, and highly albuminous; pain in head, back, and knees; pulse 60; temperature $103\frac{4}{5}$° F. The following notes were taken daily about 9 a. m.:

1888.	November	7.	Pulse,	60.	Temperature,	102 1-5	deg. F.
	"	8.	"	52.	"	101 4-5	"
	"	9.	"	48.	"	97 1-5	"
	"	10.	"	46.	"	96 2-5	"
	"	11.	"	43.	"	96	"
	"	12.	"	44.	"	97 1-5	"
	"	13.	"	49.	"	98	"
	"	14.	"	44.	"	97 3-5	"
	"	15.	"	44.	"	97 3-5	"
	"	16.	"	60.	"	98	"

I know of no other fever with so slow a pulse, nor such a temperature.

This was a typical case, except he was sick much longer than the average. There is a tendency among yellow fever experts to place very great and undue prognostic value upon the amount of albumin found in the urine after the third day. Cases generally show from 3 to 75 per cent. of albumin. When I showed the thick dark-brown syrupy urine of this patient to an expert of seven epidemics; after he had boiled and used the nitric acid test for albumin, which showed about 75 per cent., he said: "Well, get him a coffin; you cannot cure such cases." Nevertheless, this man made a good recovery, and is a well man to-day.

Possibly there are some points in my own case which may be of interest to the reader. On September 3, 1888, at 9:30 p. m., I was suddenly taken with a most violent pain in my head, back, and legs. My face in a few minutes became puffed up and assumed a red-ash color; then came a chill which seemed to *freeze my very bones. A dazed, dull feeling took* possession of my senses, and there seemed to be a frozen iron vise pressing upon my trochanters. My pulse-beat was 60 per minute, and the thermometer registered 104° F. I went at once to bed, and had *my stationary bath-tub filled with hot mustard water* of 115° F. I took a blanket from my bed and wrapped it around me, and had myself led to the bath-tub, for I could not walk alone. I got in and drew the blanket over the top of the bath-tub, so as to keep in the heat, and there I took a hot bath for about twenty minutes. My headache and other pains left me before I got out of the bath-tub, and they *never returned. One very striking peculiarity of* this disease, I am sorry I had to notice, was a constantly sick stomach, with fearful vomiting upon the least movement of hand or foot; and the only way I could get ease was to lie flat upon my back with my legs straight down in the bed and my arms pinioned flat to my sides, with mouth and eyes closed. This position I used subsequently quite often on others, with benefit, in quieting their sick stomachs. For two days after the fever left me, I was so inordinately weak that I could not walk, nor could I sleep unless constantly fanned. The moment they quit fanning me I would wake up. This defect seemed to come from muscular asthenia located in the respiratory muscles, and it is evident that my blood was so vitiated that there was more than the ordinary demand for oxygen. The patient during yellow fever, and in convalescence, must lie still and not attempt to get up even into a sitting position in bed, because the heart is very prone to a delirious action, and its even-balanced rhythm is easily altered by any exertion; and there is a very great want of power to maintain a stable equilibrium of the cardiac muscles, which too often ends in complete heart failure.

There is an old philosophic axiom, that action and reaction are equal and in opposite directions; *ergo*, a moderately cool bath (70°F.) increases the internal heat of the body; and a warm bath of say 115° F. will decrease the internal heat of the body, hence the beneficial use of the warm bath to reduce fever. This warm bath will make the pulse of yellow fever fuller, softer and *more frequent*, abate the pain in head and the back; and the lethargy will pass off; in fact after the hot bath yellow fever loses all its terrible power to destroy life, and that it is the best remedy known to break the force of this dreaded malady is my experience after having individually caused it to be used in more than one-eighth of all the cases of this entire epidemic; and my losses of only one and eight-tenths per cent. surely carries some weight as to its efficacy.

The following "marvellous efficacy" of a hot bath in yellow fever, by Surgeon J. D. Miller, M.D., U.S. N., is worthy of repeated reproduction. He says: "Becoming thoroughly disheartened by the result of the treatment with calomel, I determined to try a remedy which, though not new, is far too much lost sight of—the hot bath. I had a bath tub brought to the side of the patient's cot, supplied it with water of 114° F., immersed the patient in it to his chin, and with my fingers on the wrist, carefully noted the following results: the pulse immediately became fuller, softer and less frequent; (my experience is, the pulse becomes more frequent, as it should, because it is too slow,) the pain in the head and back abated; the lethargy passed off, and the ischuria was relieved, etc. I found that the change in the patient was permanent; not a single symptom regained its ascendency. I wish it to be understood that the case which I have described gives the history of every case thus treated. The last death occurred on the 4th of September 1863, and at that time there were several cases apparently slipping away under the same symptoms. They were all put into the hot bath, and all recovered. At the time, I hesitated to attribute such marvellous efficacy to so simple a remedy. I waited further evidence. On the 26th day of April, 1867, a man died of yellow fever on board the Frigate Susquehanna, then crossing the West Indies. Several cases followed this death, and again I resorted to the hot bath, with the same happy results." Can higher authority, or better evidence be produced to show that after the hot bath yellow fever loses all its terrible power for destroying life?

When our Board of Health declared yellow fever epidemic, Jacksonville contained nearly 35,000 people; two days afterwards there was a grand hegira, leaving us about two thousand whites, and eight thousand negroes. This hegira is one cause of our small mortality list, another is: our virus was attenuated in South Florida before coming to Jacksonville. Most other epidemics of the United States received their microbes direct from Cuba—while ours of 1888 came first to Key West, thence to South Florida—and last to Jacksonville. We had our microbes—as Pasteur would say—in the third culture, which modified its virulence at least one third, and gave us a Florida, but not a Simon pure Havana yellow fever. There is no exact data from which the true number of cases of yellow fever here can be arrived at; the extremes were 3,941 and 5,705, with a loss of from 412 to 430. This loss was caused by a want of home comforts, from being hauled in wagons and carts to the hospitals, and too often by drunken incompetent nurses; to say nothing of microbes and disqualified physicians. Possibly our St. Luke's hospital would never have been called the " death trap" had it not been for the necessity of hauling many patients there who had no other place wherein they could receive attention. There is no disease whose victims bear moving from one place to another as illy as do those of yellow fever. Yellow fever patients should be treated at once, and upon the spot where taken sick, if we lower the mortality from this peculiarly miserable disease. When our Board of Health was trying to send all sick persons who had not comfortable homes to the Sand Hill Cottages, or to St. Luke's hospital; more than a thousand people, both white and black, retreated into their homes as soon as they were taken sick. They locked their doors and would not call a physician for fear they would be reported to the Board of Health, and by them be compelled to go to the hospitals; and here it is a well known fact that the plain Florida cracker, and the numerically greater colored people, both dread Sheol much less than they do an hospital. This uncounted thousand people, when taken with yellow fever, went to bed, covered up head and body as warm as they could, they took hot mustard foot baths, and if necessary to keep warm and keep up a good sweat, they put bottles of hot water about their bodies. For medicines they used hot orange leaf tea constantly; they kept their bowels loose with castor oil. I have never yet heard of a death from yellow fever among the thousand or more so treated, and the same remarkably good report I have from several physicians. Is this not a striking instance of the lameness of our scientific medication? Should we not call a halt and reëxamine our premises? Recognizing the fact, that we had several sporadic cases of yellow fever in our midst in the early spring of 1888, thus making an epidemic almost certain during the summer and fall months; I commenced to cast about for a treatment for yellow fever which would save my own scalp, and several others from the coming attack of Bronze John. New Orleans, Memphis, Charleston, Savannah, and many other cities, had a record of their various epidemics recorded in my medical library; but the mortality was so great under their treatment, as there portrayed, that the great hegira of our twenty-five thousand people from Jacksonville seemed quite justifiable. Luckily, in the *American Journal of Medical Sciences* for 1866 and 1867, I found J. D. Miller, M.D., Surgeon U. S. N., Mobile, Ala., and B. F. Gibbs, M.D., U. S. N., Pensacola, Fla., furnished a treatment which they had used in 1863, that, if taken in the early stages of the disease suffered a loss of only two per cent. This treatment, with some modifications, I adopted and succeeded in bringing the mortality in the five hundred and ninety-four cases which I have treated to one and eight-tenths per cent.; although the average loss by physicians here, using the neutralization or anti-bacterial treatment, was nearly ten per cent. My treatment was to send the patient at once to a good warm bed, keeping even the hands under cover. Then, as soon as possible, a hot-mustard bath was prepared, and the patient was thoroughly heated up in the mustard bath, keeping blankets as a cover to the bath. These blankets were then wrapped around the patient, who was immediately returned to bed. When a full bath could not be had, mustard foot baths, with bottles of hot water wrapped in wet towels were placed around the body. These diaphoretic baths had a depletant effect upon the heart and vascular system, accelerating the circulation, and stimulating secretion and excretion. Hot sour orange leaf tea was then prepared, and drank freely every half hour during the fever, to produce warmth and a copious perspiration. To keep the bowels quite loose, a drachm of compound jalap powder was given in hot orange leaf tea every four or six hours. This fever mixture was given in every case.

℞. Tinct. aconiti rad., fʒj.
Spir. Ætheris nitrosi f℥j.
Liq. Ammon. acetatis f℥vij. M.
Sig. Teaspoonful in hot orange leaf tea every hour during fever.

Under this eliminative treatment the fever lasted from a few hours to one or more days, rarely more than four, although in some few cases considerably longer. As soon as there was a remission of the fever, all the above treatment was stopped: and quinine in five grain doses was given until about a drachm was taken. The only time to give quinine is at the intermission following the primary pyrexia. When quinine is given promptly, at this never so short interval, it seldom fails to stop the disease before it reaches the third stage of secondary fever, with increased prostration, too often ending in black vomit and collapse.

Dr. Gibbs gave quinine at the first appearance of yellow fever. I gave it at the remission. The advantage of the quinine given at the remission is, that there was scarcely a relapse of the fever after its use: in fact, we cut short the disease at the remission. Quinine, as I gave it, cut short the disease at least from one to four days. We found quinine worthless as a prophylactic. The temperature from this time on was subnormal. I gave

℞. Tincture cinchon comp., spts. vini gallici, āā fʒv. ♍.
Sig.. Take a table spoonful in sweetened cold water every third hour.

This stimulant-tonic gave patients an excellent appetite, and they soon gathered strength from its use.

As to food, the less taken until the fever is gone, the better it is for the patient; in fact, those who took a hot bath, hot orange leaf tea, compound jalap powder, the fever mixture and nothing else until the fever was off, fared the best, and made the most rapid recoveries. One of the very best foods used here during convalescence, was Malted milk. The stomach, in this disease, is an organ which must be treated with the greatest delicacy, as the object is to avoid the much dreaded black vomit. I had three cases recover from black vomit. The treatment of one was:

℞. Quininæ sulp., ʒss.
Spt. vini gallici, ʒvj. ♍.
Sig. Tablespoonful every half hour.

This patient was almost moribund, hence the stimulant. Lime water stopped a second; and the third recovered after,

℞. Bismuth subnit. ʒij.
Creasote gtt. x.
Cocaine gr. iij., m. f., chart no. x.
Sig. One as needed for sick stomach.

The last is a most excellent anti-emetic; in fact, the best I know for the persistent sick stomach of yellow fever. A few notes on other remedies might be in order, as for instance: antipyrin and antifebrin, if given in adequate doses, will cause the fever to drop much more rapidly than the fever mixture used by me, but, they do not have so good an eliminative action upon the skin and kidneys as does this mixture. Another fault with them is, they often bring the fever down quite rapidly, but they can not hold it down, so it rebounds and often goes higher than before they were given. Sternberg's mixture of corrosive sublimate and bicarbonate of soda, was a great favorite with too many physicians during our epidemic. I have never prescribed it; and the greatest use that I have seen from it in the hands of other physicians is: that it so irritates the already supersensitive stomach, that they have no trouble, from its use, to produce black vomit and death. A careful study of the unsuccessful treatment used in the various epidemics at Memphis, New Orleans, Shreveport, Charleston, Savannah, and many other places taught me to avoid their *sine qua non*, calomel; also ice, cold in all forms, opiates, bichloride of mercury, the salicylates, the carbolates and all that class of antibacterian remedies. The exigency is: *warmth and evacuants*; these pure and simple, if commenced within a short time from the inception, say from three hours to half a day, will not permit a loss from yellow fever of over one per cent. Calomel is an almost universal remedy for yellow fever; but this is a patent fact; that those physicians who used it here most freely, wrote most burial permits.

Probably the best intrinsic history of an epidemic is to be found in a record of the cases lost, and the cause of that loss. My first loss was a small colored girl, case No. 9. Having formerly practiced medicine north of the yellow fever belt, this epidemic was my first experience with this peculiar disease, and this loss was caused by a want of knowledge on my part of the proper management of a genuine severe case of yellow fever.

My second loss was my 19th case. This was a strong, healthy young white man who had been sick three days. One night he became restless, and the professional nurse concluded his previous knowledge of yellow fever would now come in to supplant the medicine ordered for the patient. So, in my absence, he drew out his hypodermic syringe and gave the patient a good quieting dose of morphine. The patient went to sleep; and it may be that the horn of Gabriel will be able to awaken him out of that morphine slumber. I could not, for when I saw him the next morning he was cold and dead. Morphine in this disease always does harm. I have never used it, because it stops the skin, bowels and kidneys from their great emunctory function of carrying off the ptomaines and microbes. My third and fourth losses, cases 35 and 36, were an old man and a young boy, both white. They had insufficient bed clothes, no fire; each was in a cold room by himself, with only one nurse to attend their wants. This she did as best she could. The weather was damp, cold and very chilly. No amount of good nursing nor scientific medication will take a case of yellow fever safely through wherein cold weather is not counterbalanced by good warm bedding and a comfortable room. That cold produces death, and warmth promotes health, is a well established yellow fever axiom. My fifth loss, case 52, was a very delicate young white girl, backward in her development. She had all the home comforts, good nurses, consulting physicians; in fact, everything that money could buy, except health. She died with black vomit.

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When our Board of Health declared yellow fever epidemic, Jacksonville contained nearly 35,000 people; two days afterwards there was a grand hegira, leaving us about two thousand whites, and eight thousand negroes. This hegira is one cause of our small mortality list, another is: our virus was attenuated in South Florida before coming to Jacksonville. Most other epidemics of the United States received their microbes direct from Cuba—while ours of 1888 came first to Key West, thence to South Florida—and last to Jacksonville. We had our microbes—as Pasteur would say—in the third culture, which modified its virulence at least one third, and gave us a Florida, but not a Simon pure Havana yellow fever. There is no exact data from which the true number of cases of yellow fever here can be arrived at; the extremes were 3,941 and 5,705, with a loss of from 412 to 430. This loss was caused by a want of home comforts, from being hauled in wagons and carts to the hospitals, and too often by drunken incompetent nurses; to say nothing of microbes and disqualified physicians. Possibly our St. Luke's hospital would never have been called the "death trap" had it not been for the necessity of hauling many patients there who had no other place wherein they could receive attention. There is no disease whose victims bear moving from one place to another as illy as do those of yellow fever. Yellow fever patients should be treated at once, *and upon the spot where taken sick*, if we lower the mortality from this peculiarly miserable disease. When our Board of Health was trying to send all sick persons who had not comfortable homes to the Sand Hill Cottages, or to St. Luke's hospital; more than a thousand people, both white and black, retreated into their homes as soon as they were taken sick. They locked their doors and would not call a physician for fear they would be reported to the Board of Health, and by them be compelled to go to the hospitals; and here it is a well known fact that the plain Florida cracker, and the numerically greater colored people, both dread Sheol much less than they do an hospital. *This uncounted thousand people*, when taken with yellow fever, went to bed, covered up head and body as warm as they could, they took hot mustard foot baths, and if necessary to keep warm and keep up a good sweat, they put bottles of hot water about their bodies. For medicines they used hot orange leaf tea constantly; they kept their bowels loose with castor oil. I have never yet heard of a death from yellow fever among the thousand or more so treated, and the same remarkably good report I have from several physicians. Is this not a striking instance of the lameness of our scientific medication? Should we not call a halt and reëxamine our premises? Recognizing the fact, that we had several sporadic cases of yellow fever in our midst in the early spring of 1888, thus making an epidemic almost certain during the summer and fall months, I commenced to cast about for a treatment for yellow fever which would save my own scalp, and several others from the coming attack of Bronze John. New Orleans, Memphis, Charleston, Savannah, and many other cities, had a record of their various epidemics recorded in my medical library; but the mortality was so great under their treatment, as there portrayed, that the great hegira of our twenty-five thousand people from Jacksonville seemed quite justifiable. Luckily, in the *American Journal of Medical Sciences* for 1866 and 1867, I found J. D. Miller, M.D., Surgeon U. S. N., Mobile, Ala., and B. F. Gibbs, M.D., U. S. N., Pensacola, Fla., furnished a treatment which they had used in 1863, that, if taken in the early stages of the disease suffered a loss of only two per cent. This treatment, with some modifications, I adopted and succeeded in bringing the mortality in the five hundred and ninety-four cases which I have treated to one and eight-tenths per cent.; although the average loss by physicians here, using the neutralization or anti-bacterial treatment, was nearly ten per cent. My treatment was to send the patient at once to a good warm bed, keeping even the hands under cover. Then, as soon as possible, a hot mustard bath was prepared, and the patient was thoroughly heated up in the mustard bath, keeping blankets as a cover to the bath. These blankets were then wrapped around the patient, who was immediately returned to bed. When a full bath could not be had, mustard foot baths, with bottles of hot water wrapped in wet towels were placed around the body. These diaphoretic baths had a depletant effect upon the heart and vascular system, accelerating the circulation, and stimulating secretion and excretion. Hot sour orange leaf tea was then prepared, and drank freely every half hour during the fever, to produce warmth and a copious perspiration. To keep the bowels quite loose, a drachm of compound jalap powder was given in hot orange leaf tea every four or six hours. This fever mixture was given in every case.

℞. Tinct. aconiti rad., fʒj.
Spir. Ætheris nitrosi f℥j.
Liq. Ammon. acetatis f℥vij. M.
Sig. Teaspoonful in hot orange leaf tea every hour during fever.

Under this eliminative treatment the fever lasted from a few hours to one or more days, rarely more than four, although in some few cases considerably longer. As soon as there was a remission of *the fever*, all the above treatment was stopped: and quinine in five grain doses was given until about a drachm was taken. The only time to give quinine is at *the intermission following the primary pyrexia*. When quinine is given promptly, at this never so short interval, it seldom fails to stop the disease before it reaches the third stage of secondary fever, with increased prostration, too often ending in black vomit and collapse.

Dr. Gibbs gave quinine at the first appearance of yellow fever. I gave it at the remission. The advantage of the quinine given at the remission is, that there was scarcely a relapse of the fever after its use: in fact, we cut short the disease at the remission. Quinine, as I gave it, cut short the disease at least from one to four days. We found quinine worthless as a prophylactic. The temperature from this time on was subnormal. I gave

℞. Tincture cinchon comp., spts. vini gallici, āā f℥v. M.
Sig. Take a table spoonful in sweetened cold water every third hour.

This stimulant-tonic gave patients an excellent appetite, and they soon gathered strength from its use.

As to food, the less taken until the fever is gone, the better it is for the patient; in fact, those who took a hot bath, hot orange leaf tea, compound jalap powder, the fever mixture and nothing else until the fever was off, fared the best, and made the most rapid recoveries. One of the very best foods used here during convalescence, was Malted milk. The stomach, in this disease, is an organ which must be treated with the greatest delicacy, as the object is to avoid the much dreaded black vomit. I had three cases recover from black vomit. The treatment of one was:

℞. Quininæ sulp., ʒss.
Spt. vini gallici, ℥vj. M.
Sig. Tablespoonful every half hour.

This patient was almost moribund, hence the stimulant. Lime water stopped a second; and the third recovered after,

℞. Bismuth subnit. ʒij.
Creasote gtt. x.
Cocaine gr. iij., m. f., chart no. x.
Sig. One as needed for sick stomach.

The last is a most excellent anti-emetic; in fact, the best I know for the persistent sick stomach of yellow fever. A few notes on other remedies might be in order, as for instance: antipyrin and antifebrin, if given in adequate doses, will cause the fever to drop much more rapidly than the fever mixture used by me, but, they do not have so good an eliminative action upon the skin and kidneys as does this mixture. Another fault with them is, they often bring the fever down quite rapidly, but they can not hold it down, so it rebounds and often goes higher than before they were given. Sternberg's mixture of corrosive sublimate and bicarbonate of soda, was a great favorite with too many physicians during our epidemic. I have never prescribed it; and the greatest use that I have seen from it in the hands of other physicians is: that it so irritates the already supersensitive stomach, that they have no trouble, from its use, to produce black vomit and death. A careful study of the unsuccessful treatment used in the various epidemics at Memphis, New Orleans, Shreveport, Charleston, Savannah, and many other places taught me to avoid their *sine qua non*, calomel; also ice, cold in all forms, opiates, bichloride of mercury, the salicylates, the carbolates and all that class of antibacterian remedies. The exigency is: *warmth and evacuants*; these pure and simple, if commenced within a short time from the inception, say from three hours to half a day, will not permit a loss from yellow fever of over one per cent. Calomel is an almost universal remedy for yellow fever; but this is a patent fact; that those physicians who used it here most freely, wrote most burial permits.

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My second loss was my 19th case. This was a strong, healthy young white man who had been sick three days. One night he became restless, and the professional nurse concluded his previous knowledge of yellow fever would now come in to supplant the medicine ordered for the patient. So, in my absence, he drew out his hypodermic syringe and gave the patient a good quieting dose of morphine. The patient went to sleep; and it may be that the horn of Gabriel will be able to awaken him out of that morphine slumber. I could not, for when I saw him the next morning he was cold and dead. Morphine in this disease always does harm. I have never used it, because it stops the skin, bowels and kidneys from their great emunctory function of carrying off the ptomaines and microbes. My third and fourth losses, cases 35 and 36, were an old man and a young boy, both white. They had insufficient bed clothes, no fire; each was in a cold room by himself, with only one nurse to attend their wants. This she did as best she could. The weather was damp, cold and very chilly. No amount of good nursing nor scientific medication will take a case of yellow fever safely through wherein cold weather is not counterbalanced by good warm bedding and a comfortable room. That cold produces death, and warmth promotes health, is a well established yellow fever axiom. My fifth loss, case 52, was a very delicate young white girl, backward in her development. She had all the home comforts, good nurses, consulting physicians; in fact, everything that money could buy, except health. She died with black vomit.

My sixth loss, case 343, was a white woman, past middle life, who had nursed a paralytic until she was exhausted and completely worn out: then she took yellow fever. For two days she would not have medical attention; when seen, she was frightened, almost frantic, would not take medicine nor do anything advised; was fearful she would die, and thus she helped Bronze John to give her black vomit. The first two days are of more importance in controlling yellow fever, than in any other disease in the whole category of fevers. That time lost, and the patient rarely recovers.

My seventh loss, case 381, was a colored male nurse who had been nursing yellow fever cases for weeks. When he himself took yellow fever, he refused to have a physician called, nor would he do anything to combat his disease.

I saw him but once, at 9:30 P.M. He had then been sick just one week: was pulseless, cold, could not swallow, was covered with an old blanket and a piece of carpet. No fire was in his damp, cold room. He died with black vomit before morning.

My eighth loss, case 441, was a strong and naturally healthy negro man. He went through with yellow fever all right, and was discharged. Two days afterwards I was recalled; he then had double pneumonia. His neighbors told me, that he had gone up town, caught cold; and thus he furnished another illustration of the great need, in this disease, even after having passed its most trying ordeal, of being very careful as to exposure for a week or more after having been discharged.

My ninth loss, case 481, was a long, lean lank Florida cracker. He was half fed, half clothed, and stayed—for he never lived in the proper sense of that word—in a cold, open, one roomed house, which was not plastered, in fact, the natives here seldom go to the trouble and expense of plastering the interior of their homes. There were six others sick in this room; he had no bed nor bedding, but lay upon the floor with his ordinary scant cotton clothing on. There was no fire in the house, nor was there a stove nor fire place wherein one could be made. The cooking was done in iron pots in the back yard by an old dried up specimen of possible humanity having some resemblance to a woman. She was smoking a strong pipe, and was, with the two pots, surrounded by dogs and children. Grits, bacon, and coffee sweetened with "long sweet"—as the natives call Florida syrup—was all they had to eat. I gave them a mattrass, blankets, and a liberal supply of food from our commissary, but neither these nor medicines did any good, for he died on the third day with black vomit.

My tenth loss, case 514, had long passed middle life. He had just been on a spree, from which he had hardly sobered up when he was taken with yellow fever. He and John Barleycorn were great personal friends—too great, in fact, to successfully combat Bronze John; for it is a notorious certainty that the tippling class of patients have seldom withstood the ravages of this disease during this epidemic. He had been sick three days when I first saw him. He was frightened, fearing he had yellow fever, for too well he knew that many who imbibed alcoholics had already died. His pulse was 70, temperature 102⅘ F., enlarged white furred tongue, eyes and skin yellow, bowels constipated, urine scanty, highly albuminous and of a dark brown color. His stomach was in a wretched condition and would retain nothing; hence, no medicine acted to retard the progress of his case to a fatal issue with black vomit. This patient in his mad frenzy grabbed a butcher's knife from an adjoining table and rushed at his nurse, but fell dead upon the floor. He did not reach her with the knife, but as she fled he covered the whole back part of her dress with his black vomit.

My eleventh loss, case 516, was an *Italian woman*. She could not speak English, nor could I speak Italian. No interpreter was to be had. Her husband and I tried pantomime for directions as to the giving of medicines and proper nursing. We failed. She chewed up my thermometer, and died with black vomit.

To show the portability of yellow fever germs I will cite the case of Mr. S. J. Dugan. He is an intelligent Arab-native of Jerusalem, Palestine—who had spent two winters in Florida. He left Jacksonville, May 20, 1888. Was ten days en route to Lawrence, Mass., there he remained three weeks. Then he went to New Hampshire, remained one week, and on July 1, 1888, arrived at his summer home, Block Island. He was then in excellent health. On July 2, 1888, he opened a lot of shells, alligators, and other Florida curiosities, which had been sent him by rail from Jacksonville, Fla. On July 6, 1888, he was taken sick with a genuine case of yellow fever. He says he had black vomit for four days, and in conversation April 14, 1889, he gave me all the usual symptoms of yellow fever, besides, that was the *diagnosis* of the Portuguese physician who attended him at *Block Island. His physician had been conversant* with yellow fever in South America, and also in Mexico, hence there can be no doubt that the boxes of curios shipped from Jacksonville, carried the disease to Block Island.

There is a peculiarity about the contagiousness of yellow fever which is unique. People living at Pablo, and in the country, came to Jacksonville with impunity, if they did not enter town during, or remain in after the dew period. This was from 9 A.M., to 4 P.M. As an exemption case, I will cite the last case of the epidemic, my 594th. During over two months he came to Jacksonville every day from his dairy farm five miles distant. He came at 9 A. M., left before 4 P. M., except one night he did not get out of the city until 8 P. M. Two days subsequently he had an attack of yellow fever—from which luckily he recovered.

43 Julia Street.

THE NERVOUS ELEMENT IN THE VOMITING OF PREGNANCY.

Read before the Chicago Medical Society.

BY L. HARRISON METTLER, A.M., M.D.,

OF CHICAGO, ILL.

Mr. President and Fellow-Members:

In presenting this paper I do not hope to advance any radically new ideas, but rather to emphasize certain facts in regard to the nervous element in the vomiting of pregnancy which seem to have been indifferently considered throughout the voluminous literature upon the subject. It is surprising, as well as unfortunate, that so many physicians look upon the vomiting of pregnancy as a trifling matter. One writer says "that although the morning sickness sometimes persists during the whole period of pregnancy, it remains endurable, causing the patient annoyance rather than injury. The digestive functions remain more or less normal, and the vitality of the patient is not essentially impaired." Such has not been the result of my own observation. The distress alone, in even the mildest cases, is a constant tax upon the woman's nerves, and as a result she is less able to endure parturition than she otherwise would have been. After careful inquiry I find that women who suffer from much morning sickness have, as a rule, tedious or otherwise troublesome labors. I have even observed in multiparæ that at one time they will have much nausea and vomiting, followed by difficult labor, while at another time they will be quite free from the vomiting, and will pass through the succeeding labor with comparative ease. I confess that I have never had the simplest case of morning sickness that did not give me a certain amount of anxiety. Not only do I fear its becoming uncontrollable at almost any time, but I anticipate a confinement more or less troublesome, in proportion to the amount and duration of the nausea and vomiting. Remembering how readily the mild forms sometimes assume the pernicious type, and how frequently fatal the latter appear to be, it would seem that this indifference to the subject is entirely inexcusable.

As an illustration of the contradictory state in which our knowledge of the vomiting of pregnancy still remains, the writer just referred to describes the benign and malignant characters of the affection in almost the same paragraph, and then asserts that "even the graver forms of this disease yield, as a rule, to rational treatment, unless they are complicated by serious pathological conditions which of themselves render recovery impossible. Pregnancy may aggravate such cases, and perhaps hasten death, but it must be admitted that there exists no causative relation between gestation and the lethal issue." I am at a loss to understand why such cases are denominated the vomiting of pregnancy any more than the vomiting of chronic lead poisoning or of brain tumor should be so called if these happened to complicate the pregnant state.

Gueniot declares,[1] rather dogmatically, that "one thing is positively known and incontestable, namely, that the pregnancy is the prime cause of the incoercible vomiting, since without it the vomiting does not occur," and that according to his own "observation, as well as study of the cases reported up to the present time, the most frequent cause is a morbid or abnormal state of the uterus." Then, as a kind of proof to this assertion, he cites a case that he saw "a dozen years ago" in which the cervix, strongly flexed, was crushed down by the weight of the superincumbent body upon the floor of the perineum. The relief of this state of affairs resulted, of course, in the disappearance of the vomiting. Again I question whether such a case ought properly to be considered an example of the vomiting of pregnancy. The pregnancy had about as much to do with the development of the vomiting as sitting upon damp ground has to do with the production of the vomiting which usually accompanies the resultant dysmenorrhœa. Let us be precise in our distinctions and not credit normal physiological processes with symptoms that belong to gross pathological lesions.

Certain authorities, notably the American System of Obstetrics, go so far as even to apply the adjective *physiological* to the vomiting of pregnancy. Now, vomiting is never a physiological process in man—a statement in which I am supported by Flint, in the last edition of his Human Physiology. The fact that it occurs in some pregnant women and not in others; that temperament, nationality, and climate manifest an extraordinary influence upon it, and that it not only accompanies pregnancy, but many very dissimilar affections of other organs and parts of the body, seems to my mind to protest most vehemently against its ever being called a physiological phenomenon. It is emphatically pathological, and the failure to regard it so will occasionally end to the disaster of the patient, and at all times to its incomplete scientific investigation.

Pregnancy, on the other hand, is a physiological process, and if normal in a normally healthy woman is hardly conceivable as the cause *per se* of so forlorn a condition as is the frequent vomiting. A normal physiological process ought rationally never to produce a pathological state. The usual absence of vomiting of pregnancy amongst barbarous women, and amongst races and nationalities possessing strong physical constitutions, tends to confirm this. From such a rigid standpoint, then, we must cease to believe that pregnancy is the prime source, though we may still regard it as the inciting cause when certain pathological conditions are present. We must look elsewhere for the real cause than merely at the developing ovum within the uterus, and in doing so we must look for and expect to find some lesion, organic or functional, if you please, but one decidedly of a pathological character. I do not consider this a mere quibble about terms, but as a necessary and unavoidable hypothesis for the further study and right understanding of this much confused subject.

It would be time wasted to attempt to enumerate all the etiological reasons that have been given by different writers for the vomiting of pregnancy. In a kind of despair at ever finding any one cause for so variable and uncertain an affection, most authors have come to the conclusion that it is the result of many causes operating together. Perhaps that is the safest view to adopt in accordance with our present knowledge, but it ought not thereby to limit further investigation, for undoubtedly there is a cause which is preëminent above all others, and which is common to a greater or less degree to all cases alike. It seems to me that that is to be found in the nervous system.

Consider for a moment the explanations given by some of the authorities, and note how they bear upon this hypothesis. The oldest view is that the morning sickness of pregnancy is purely and simply a reflex phenomenon. This is most plausible, as many other affections of the genital organs, as well as of other parts of the body, give rise to sympathetic vomiting. A modification of this old view is that lately proposed by Dr. James Oliver[2] to suit the modern theory of evolution. He infers a hereditary interaction between the centers that preside over nutrition and procreation. This has been transmitted from primordial ancestors in which self-preservation, represented by the two elementary functions of self-nutrition and propagation of the species, is the chief end of existence. This is certainly ingenious, but quite unnecessary to explain so common a phenomenon as reflex action. The argument, however, points most decidedly to a nervous cause of the trouble, and it needs only to be added that the weaker or more irritable the reflex centers the more violent and uncontrollable will be the vomiting. According to this explanation, however, the vomiting is not essentially the vomiting of pregnancy, any more than the vomiting which accompanies biliary or renal calculi, cerebral or medullary diseases, intestinal obstruction, certain mental emotions, and perverted sensibilities is the normal physiological accompaniment of these affections. It is a nervous vomiting simply, and a coincident symptom of pregnancy, indicating an abnormal state of the nervous system, incapable of resisting the strain exerted upon it by a normal process. Nay, more, just as the above-named diseases cause vomiting by reason of an underlying pathological condition, so *vice versa* it would seem that the so-called vomiting of pregnancy must after all be the result of some concealed lesion.

Dr. Blume,[3] of Allegheny, reiterates this view when he says that the vomiting of pregnancy "is almost universally accepted to be a reflex neurosis originating in the uterus and dependent either upon pregnancy alone, or upon coexistent pathological conditions." Such a conception of the etiology does not seem to me broad enough. Would the healthy nervous system, in the absence of any uterine or gastro-intestinal lesions, cause vomiting with the pregnancy of one woman and not with that of another? Is it reasonable to suppose that a normal physiological process like pregnancy should, under the same conditions, give rise to severe vomiting in a woman with some of her pregnancies and not with others? The morning sickness is undoubtedly a reflex neurosis, dependent sometimes upon a gross discoverable lesion, but more often not. We must conclude, therefore, that in this latter class of cases the principal source of the trouble resides somewhere within the nervous apparatus.

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[1] Bulletin de L'Academie de Medecine, Sept. 17, 1889.

[2] British Medical Journal, 1887.

[3] Journal of American Medical Association, August 22, 1891.

To say that the relief universally afforded by the induction of abortion is proof positive of the uterine origin of the disease, irrespective of the nervous system, is fallacious reasoning. In the first place, abortion does not always give relief. Flaischlen[4] reports five cases of pernicious vomiting, in which induced abortion gave prompt relief in two of the cases, while two died in spite of this procedure. In the second place, abortion affords relief much as the amputation of a limb would for a painful neuroma. It is a most heroic and rarely needed therapeutic measure. It proves nothing in regard to the etiology of the trouble, since it is too overwhelming in its effects for us to derive any delicate inferences from.

Dr. Blume relates an instance of the death of a fœtus in utero with immediate cessation of the vomiting, and the delivery of the dead fœtus four months later. He says that there was a double laceration of the cervix, ectropion, and a partially cured endometritis, and yet the vomiting ceased immediately upon the death of the fœtus. He infers, therefore, that the influence of the growing ovum and the stretching of the uterine fibers must have been the cause of the vomiting. I fail to see the force of the argument. It is a familiar fact that the vomiting of gestation often terminates abruptly without there being any satisfactory explanation, other than some sudden and profound impression made upon the nervous system. Such freaksome phenomena are chiefly characteristic of the neuroses; and such cases as the above are too rare and too uncertain to establish any corollaries upon.

Again the same author, like many others, accounts for the greater frequency of the affection in primagravidæ to the "greater resistance of the virginal uterus," a fact much more difficult to prove, and less frequently true, than the fact that in primagravidæ the nervous system is always more or less overwrought, because of the young wife's lack of experience, dread of parturition, and sudden change from a non-bearing to a child-bearing woman.

Gueniot[5] divides the causes of the vomiting of pregnancy into those of the uterus, the nervous system, and the stomach. He then briefly delineates the particular lesions found in each. In connection with the uterus he notes that the morning sickness is often associated with flexions of the neck and body, tumors, inflammatory and ulcerative conditions of the cervix, hyperæsthesia of the genital tract, chronic and subacute inflammation of the uterine parietes and appendages, disease of the ovum itself, and not unfrequently the absence of all evidences of uterine trouble. This is a formidable array of causes to originate so common, so uniform, and regular a trouble as the vomiting of pregnancy. As eccentric irritants, we can conceive how occasionally these various lesions, when complicated with pregnancy, ma give rise to pernicious vomiting; but when we r member how often women, both pregnant and no pregnant, suffer from these troubles, yet experien no morning sickness, or, at least, a very mild for of it; and again, when we remember that when thes causes are present the vomiting bears no direct pr portion in its severity to the severity of the lesion we feel obliged to look elsewhere for the real sour of the trouble, and to regard these merely as possib and occasional exciting causes.

For the relief of the vomiting Gueniot very justl recommends the usual gynecological treatment these lesions. The question naturally sugges itself here, however, if these had been treated an cured prior to the pregnancy, would the patient hav been free from morning sickness during her ne gestation? Many reported cases seem to indicate negative answer; the one previously related fro the experience of Dr. Blume is an instance in poin Women who are perfectly free from all uterine di case, as well as women who have been cured of th same are occasionally the victims of most perniciou vomiting. Hence, we must eliminate lesions of th uterus and its appendages from among the tru causes of the essential vomiting of pregnancy. Ho shall we account, then, for the relief which commonl follows the treatment of these lesions? First by th removal of the complication, and secondly by th impression made upon the nervous system. Guenio himself recommends in the non-operative treatmen of the uterine lesions to which he attributes the un controllable vomiting, such drugs as belladonna cocaine, and morphine. Dilatation of the cervi might justly be classed under the same therapeut head, for it acts upon the nerves much as it does i the relief of vaginismus. The treatment for the vom iting of pregnancy then, when it is associated wit uterine lesions, is, after the removal of these compli cations, largely a treatment of the nervous system but these cases are only a small part of those affecte with the morning sickness.

In his second class of causes, Gueniot discusses the reflex centres of the nervous apparatus. It is to be regretted, he says, that physiology has not yet settled upon the particular location of the vomiting centre within the medulla; but that is not an important desideratum so long as we know approximately where to make the appropriate topical applications. According to some the reflex trouble is all in one spot somewhere beneath the calamus scriptorius. Others believe that the fault is in the pelvic plexus of the ganglionic nerves. A few think the whole spinal cord is the hypersensitive area, while still others attribute the hyperæsthesia solely to the terminal nerves within the uterus. A writer for the *Lance* says that during twenty years he has never failed to check completely all forms of the vomiting of pregnancy by a single vesication over the fourth and fifth dorsal vertebræ. The whole question as to the nervous seat of the trouble seems deluged with confusion. The variety of therapeutic measures employed to suppress this nervous reflex indicates the same sort of complexity. The internal administration of chloral and the bromides, the hypodermatic use of morphine, ice bags, and blisters, the ether spray, and the electric current have all been tried with variable success. One woman was completely relieved of an incoercible vomiting by a simple vaginal examination. She imagined that the ovum had been removed from the uterus, and though nothing had actually been done, when she recovered from the anæsthesia, there was no further return of the nausea. In the words of the writer for the *Annual of the Medical Sciences*, of 1888, "the result in this case led Chazan to the very probable hypothesis that in many cases of the disease it is dependent upon a general malady of the nervous system or upon psychical disorders, and not the result of an anomaly of the genital organs. The hypothesis embodies more truth than many of those which have been suggested in explanation of the obstinate vomiting of pregnancy and suggests that regard for the general condition of these patients is all important, and that frequently a profound mental impression may be more efficient than any of the alleged specifics for the disorder."

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[4] Zeitschrift für Geburtshülfe und Gynäkologie, Band xx., Heft 1.

[5] Loc. cit.

Gueniot's third class of causes, those of the alimentary canal, are commonly enough encountered and are so reasonable as to need but a passing word. Gastric ulcer, gastritis, chronic gastric catarrh, neuralgia of the stomach and constipation are so generally accompanied with vomiting that the advent of pregnancy along with any one of them, is scarcely ground enough for denominating the sickness the *vomiting of pregnancy*. The association of the vomiting and pregnancy may have been a mere coincidence, or the alimentary lesion may have been merely an eccentric irritant to an already disordered nervous system. These lesions, like those of the uterus, are far too varied in character, too dissimilar in different patients and too unfrequent to be assigned as important causes for the frequent, uniform and singularly physiological-like phenomenon of the essential vomiting of pregnancy. Like the uterine lesions they need treatment, of course, as complications. The remedies usually employed by the mouth, and as a rule, they are very few in number, exercise a sedative or stimulative action upon the terminal nervous apparatus of the stomach, and through it upon the general central system. Gueniot substitutes alkaline for all acid drinks, applies fly blisters to the epigastrium and administers laxatives freely.

In connection with these uterine and gastric causes, permit me to quote a very pertinent remark of Horocks. He says "where there has been no postmortem examination in a fatal case of vomiting, I do not think that one is entitled to say that pregnancy caused the fatal vomiting. It may have been the cause and the only cause, or it may have been an aggravation of some other cause, or it may have had nothing to do with it. Skepticism as to the alleged frequency of this disorder, in the present state of our knowledge is accordingly eminently in order."

In an exhaustive paper on the subject Horwitz, of St. Petersburg, adopts the term "vomitus gravidarum perniciosus," and draws a sharp distinction between this form of the trouble, which he says usually occurs between the tenth and eleventh weeks, and the mild morning sickness, which commonly makes its appearance in the early part of the pregnancy. Gueniot on the other hand asserts that "there is no difference between the ordinary morning sickness and uncontrollable vomiting, but a difference of degree."

I believe that it is in the uncontrollable cases generally that some complicating lesion, such as those enumerated, will be found, but I do not feel that we are warranted in calling such cases the *vomiting of pregnancy*, as we do those where no cause can be discerned save the simple aggravation of a perverted nervous system by gestation.

It seems then that it is the nervous system which is really at fault in the true, uncomplicated vomiting of pregnancy. In the majority of the reported cases the patient has been of a decidedly neurotic temperament, or else the victim of some particular form of nervous debility. My own experience confirms this. Excepting a few cases in which there was a complicating stomach or uterine disorder, I cannot recall one under my own observation in which the vomiting did not show a severity, more or less proportionate to the amount of nervous debility. As Ranney remarks,[6] the *vomiting of pregnancy* is essentially a nervous vomiting and is comparable to that which accompanies chlorosis, hysteria, and gastrodynia. "It is not to be confounded with that of local diseases of the stomach or of the alimentary canal, since the symptom depends purely and exclusively upon some abnormal condition of the nerves, rather than upon pathological changes in the stomach or intestine."

So decidedly neurotic in its origin is this form of vomiting that Flint speaks of a chronic variety of dyspepsia frequently occurring in young girls, due to a vitiated nervous system, that is hard to differentiate at times from the vomiting of pregnancy.

The group of remedies possessing the endorsement of the highest authorities, and found more frequently to relieve the morning sickness, are the nerve tonics and sedatives. Opium, chloral, the bromides, nux vomica, belladonna, cocaine, arsenic, external application of heat and cold, vesication and electricity are more commonly employed than anything else. In very many cases the vomiting does not return after the withdrawal of the remedy, a fact which proves that the nervous system had been somehow profoundly affected, and that the vomiting was therefore not due solely to a uterine or gastro-intestinal lesion.

There is normally a double force exercised by the nervous elements. One is a kind of objective force, and is seen in all the ordinary manifestations of nervous activity. The other is more of a subjective force, and is indicated in the popular phrase, "power of self-control." When there is perfect equilibrium between these two forces so that the individual is unconscious of discomfort, while to others he appears at perfect ease, the state in regard to the normal nervous system at least may be characterized as one of perfect health. Such perfect health, however, is rare under our modern civilization with its high nervous tension, caused by sharp competition and an excessively emotional mode of life. The delicately organized nervous system is the first to feel the strain, the normal equilibrium between its elaborating and resisting powers is disturbed, and the patient soon succumbs to a state of abnormal stupor or irritability. Neurasthenia is the modern term to describe this condition. It can scarcely be called a disease, and yet it is far from being a state of health. It is simply exhaustion, deterioration, lowered vitality. It indicates a need of tonic treatment, but treatment of the most diverse sort for different patients. When such a patient becomes pregnant, the whole nervous apparatus manifests an unusual sensitiveness to the physiological change, and together with a host of other symptoms, reveals it by an abnormal action of the alimentary canal. If, in addition to gestation, there be any lesions of the uterus or stomach, the effect upon the debilitated nervous system will be all the more pronounced. This, it seems to me, is the true cause of the vomiting of pregnancy, and, at the same time, the true explanation why long standing troubles of the uterus and stomach give rise to an obstinate vomiting when the woman becomes pregnant, though previously they caused her not the slightest uneasiness.

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[6] Applied Anatomy of the Nervous System, Second Edition, p. 504.

This conception of the origin of the vomiting of pregnancy discountenances the notion of its being dependent upon any one centre in the medulla. The genital and nutritive centres may be closely united and there may indeed be a special vomiting nucleus. These may all, or each, be affected along with the whole of the nervous system, but both reason, and the results of treatment, argue that only in a small number of cases is the vomiting due solely to such centres, if at all. Indeed, the act of vomiting seems rather to be the result of a lack of proper coördination between widely separated parts of the nervous system. This is shown by its presence in so many, and such diverse states of disease. At times it is purely mental in its origin, at others it is distinctively due to some organic lesion. Even in health any unusual change of environment or abrupt alteration in the organism itself will cause more or less vertigo, with nausea and vomiting. Such cannot possibly be the result of a defect in one small spot of the cerebro-spinal axis, as I have already shown in a paper with report of a case of aural vertigo, read before the Philadelphia Neurological Society, and published together with the discussion in *The Journal of Nervous and Mental Disease*, for January, 1891.

On this subject let me quote Mills,[7] who represents the most advanced school of physiologists. He says, "the vomiting centre is usually located in the medulla, and is represented as working in concert with the respiratory centre. But when we consider that there is usually an increased flow of saliva, and other phenomena involving additional central nervous influence, we see reason to believe in coördinated action implying the use of parts of the central nervous system not so closely connected anatomically as the respiratory and vomiting centres are assumed to be. Indeed, it does not seem probable that the doctrine of centres in its present form, especially with such precise limitations anatomically and physiologically, will continue to be maintained. We seem to have been overlooking the connection of parts, while occupied with defining their limits."

When this power of coördination is disturbed or weakened by a general nervous debility, vomiting will be excited by the most insignificant causes. This is the reason, I believe, that pregnancy, a normal physiological process, and a condition to which a healthy, well-developed woman is frequently and successively liable, during the best part of her life time, causes such distress, and such an unnatural pathological condition as the so-called vomiting of pregnancy.

In conclusion, let me reaffirm that the simple, uncomplicated vomiting of pregnancy is a nervous disease, a neurosis, if you please, dependent upon an aggravation of a debilitated nervous system. The vomiting due to gross uterine or gastro-intestinal lesions, complicating pregnancy, ought not, for the sake of scientific accuracy, be classed as the vomiting of pregnancy. Such should be regarded as special diseases and so treated. By the adoption of such a strict criterion, much of the confusion now surrounding the whole subject will be cleared up by the segregation of that class of cases in which no discernable lesion is the cause of the vomiting, but in which it will be found that the nervous system is chiefly at fault and needs the appropriate general treatment.

4228 Greenwood Ave., Chicago.

INTRACRANIAL CLOT FROM INJURY WITHOUT FRACTURE OF THE SKULL.

BY C. E. RUTH, M.D.,
OF MUSCATINE, IOWA.

Case 1.—May 9, 1891, Dr. C. W. Battey requested me to see L. G., aged 5 years, in consultation with him. Four days previously she had fallen fifteen and a half feet, striking her head on a plank sidewalk. She was picked up unconscious, but remained so only for a few moments. Physicians who examined her immediately found no fracture, depressed bone, or other evidence of serious injury.

Since the fall she had had no opiate or sedative of any kind, yet had no pain, ate well, bowels open, and slept eighteen hours in twenty-four; answered questions correctly, but hesitatingly; protruded and retracted the tongue like a typhoid patient. Sensation and muscular coördination was perfect. Temperature 99½° F., pulse 72. There was great discoloration of all the palpebral and ocular tissues, with sufficient œdema to completely close the right eye and prevent inspection of the right pupil. Left pupil responded readily to light. The discoloration extended over a considerable part of the right temple. There was a small, flat circumscribed swelling over the left parietal bone, 1¼-inch to the left of the bregma, and limited anteriorly by the fronto-parietal suture. The extravasation of blood into the ocular, palpebral, and temporal tissues was not due to direct contusion of the parts, but to laceration of vessels deeply placed in the orbital cavity, with possibly fracture of the horizontal portion of the frontal bone, due to transmission of force from the superior portion of the cranial vault. At least, such was my opinion, and the subsequent history proved its correctness, in part, at least. There was no solution of continuity in the integument, and I could find no disturbance in the normal relations of any osseous tissue. I diagnosed intracranial clot, and gave an unfavorable prognosis unless it could be removed, but was not certain whether it was located under the small parietal swelling, where I believed the impact occurred, or at the floor of the anterior frontal lobe on the right side. Deciding in favor of the former, I cut down on the enlargement and turned out a clot which had formed under the pericranium, and dissected it from the bone over a space as large as a silver dollar. Removing a disc ½-inch in diameter from the center of the pericranial denudation, directly over the course of the anterior branch of the middle meningeal artery, brought another clot into view.

This second clot was dark and grumous, $\frac{3}{16}$ of an inch in thickness in the middle, and about one inch in diameter. It had formed between the dura mater and parietal bone. The artery bifurcated just before reaching the lower edge of the trephine disc, and both branches had plainly grooved the bone. In the formation of the clot, the dura, with the meningeal vessels, was carried before the clot inward against the brain, and out of the way of the trephine. The vessels could be felt pulsating on the dura mater after the clot was removed. The disc was $\frac{1}{32}$ of an inch in thickness on one side, and practically devoid of diplœ, while the other side was $\frac{1}{8}$ of an inch in thickness. The external and internal periosteum being removed for some distance beyond the disc margins and the possibility of a small fragment of the clot being left, decided me in favor of drainage, and not to replace the disc. Operation and dressings were as aseptic as hurried preparations and unfavorable surroundings would make possible, and recovery was uneventful with practically normal temperature, and complete in two weeks. I think many cases of death in children, diagnosed and treated as brain fever or meningitis, are due to injuries received by falls and blows days and weeks before, in which an intracranial clot was produced, followed by degeneration in and around the same. I can recall cases in my own experience in which this was probably the case. In nearly all these cases the hæmorrhage is meningeal and consequently amenable to treatment if its location can be diagnosed, for the danger of a trephine operation if carefully and aseptically done when the dura is not opened is not great, while death is almost inevitable if the clot is not removed. We can, I think, expect to find these cases of meningeal hæmorrhage without fracture only in children. To produce laceration of a meningeal vessel without fracture of the skull, we must have a thickness of bone and elasticity which will make it possible to drive the bone inward upon the brain, and yet be able to regain its normal position, with so great speed as to make it impossible for the softer and less elastic brain and membranes to follow it, and so are torn from their attachments to the bone. Again, if we have a portion of the skull very thin, surrounded by rapidly thickening skull, as in my case, if the thin portion were driven in and succeeded in regaining its normal position it would do it with great velocity. We know that the recoil in a spring is sometimes sufficient to throw out a piece of the spring on the convex side. This I offer as the only explanation of the lacerations of meningeal vessels, unaccompanied by fracture of the skull, which is satisfactory to my mind. We can see that the liability of such occurrences must rapidly decrease as age advances.

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[7] Text-book of Animal Physiology by Wesley Mills. D. Appleton & Co., 1889, p. 340.

Conclusion.—As these cases seldom come under the surgeon's care until grave symptoms develop, at a more or less remote period from the injury, I think we should sound a note of warning to physicians, not to lightly consider head injuries that from the supposed impact might be serious. They should carefully note every evidence of external injury, obtaining if possible distance fallen, size, weight, and velocity of missile doing the injury and exact point of principal impact and its direction, and keep the cases under observation, making careful records at the time. He should let at least three months pass before being willing to declare his patient safe. These notes and histories may be of incalculable value to the surgeon when every external evidence of injury has disappeared and the occurrence, possibly, passed out of mind of the friends.

Jan. 11, 1892.

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Meeting, December 15, 1891.

T. D. DAVIS, M.D., PRESIDENT, IN THE CHAIR.

Subject for discussion, SYPHILIS.

Dr. Thomas: It was but a few days ago that I received a notice requesting me to open a discussion at this meeting. It is usual to open a discussion with a well digested paper. The time has been so short that it would be impossible for me to prepare anything worthy of the dignity of a "paper." What I shall present will be more in the form of a syllabus, expecting you to elaborate.

First. How long is syphilis contagious?

The profession, as a rule, does not have definite and uniform opinions upon this point. Judging from remarks that I have heard made at various times, some believe that there is no limit to the *contagious* character of syphilis, forgetting that the disease is a self-limited one.

Possibly I can formulate my views better by reporting three cases, from a number of similar ones, from my case-book, as follows:

Case 1.—Mrs. A., married, when the man who became her husband was in the secondary (end of first year) stage of syphilis. In ten months afterward she gave birth to a very large (weighing 12 pounds) and healthy looking child. The child was still-born, not from syphilis, but from asphyxia, owing to tardy delivery of the head, the presentation being pelvic. The case was in charge of a midwife, and when I arrived upon the scene I found a dead child hanging from the vulva.

In nine months after she gave birth to a macerated fœtus of five months of utero-gestation.

In another eleven months she again gave birth to a macerated fœtus of seven months utero-gestation.

In one and a half years more she gave birth to a full term and healthy looking child. In a short time this child developed a papular syphilide. It remained under my care for two years, and is to-day a large and healthy looking lad.

In another twenty-one months she gave birth to a fine child that never presented the least suspicion of syphilis.

In two years more she gave birth to a healthy child, which is now nearly three years old, and has never shown any evidence of syphilis.

Mrs. A. has been under my continuous observation since her first accouchement. I have been unable to get a history of primary lesion or secondary symptoms in her case; she passed through them without her knowledge, but I have treated her for serious tertiary lesions, such as deep ulcers on the posterior fauces, headache and syphilitic liver.

In this case supposing the mother acquired syphilis in the early months of marriage, the contagious character of the disease disappeared in about four years. She received no treatment for her early syphilis.

Case 2.—Mr. B., in the summer of 1885, acquired a chancre on the lip through kissing a prostitute, and conveyed the disease to his wife, who was also treated by me. They already have several children.

On March 3, 1886, a living child is born, but dies in five months from marasmus, having been puny from birth.

On May 30, 1887, at full term, a macerated child is born.

On August 31, 1888, a healthy child is born and remains free from the disease.

On February 17, 1890, a healthy child is born and so remains to the present time.

In this case the mother ceases to convey or transmit the disease in less than three years.

Parenthetically, I mention that Mr. B. also conveyed the disease to his little son, two years of age, by kissing him on the forehead where there happened to be an abrasion, for it was here the chancre developed. Recovered.

Case 3.—Mrs. C. contracted a chancre about the time of her marriage, and was treated by me for the secondary lesions. She became pregnant for the first time in twenty-seven months after her marriage. The child was born at full term and apparently healthy, but in about three weeks snuffles began, an eruption appeared about the anus and afterward over the body. After a long treatment it recovered.

In one year and three months after the birth of her first child she again became pregnant, went to full term and was delivered of a healthy looking child. This child is now about three months old and has shown no signs of syphilis. Neither has it received any anti-syphilitic treatment.

In this case the contagious character of syphilis disappeared *before* four years and three months—some time *after* the third year.

You may say that this child is only three months old and that it may develop syphilis later. If a child is born and does not present evidences of syphilis before the end of the third or fourth month it is rare that it ever will. Out of 158 cases summarized by Diday only five cases presented symptoms of syphilis after the fourth month.

In brief, then, I believe that syphilis is not contagious, as a rule, after the third year. Exceptionally in the female it may continue until the fourth year.

2. What secretions contain the syphilitic virus?

None of the *physiological secretions* of the body.

Experiments by inoculation have been practiced again and again with physiological secretions of syphilitic patients upon healthy persons without the production of the disease. Diday and others have inoculated persons with the saliva from syphilitic patients who were free from mouth lesions without results. Spermatazoa from a patient in the heighth of the secondary stage of syphilis have been inoculated, by Mireur, in the non-syphilitic without producing the disease. The same thing has been done with the other physiological secretions of the body and with a like result. The only elements, then, in the body that contain the germs of syphilis are the blood, and the serum which is found upon the lesions of syphilis upon the skin and mucous membranes. A man may be suffering from the secondary stage of syphilis, and providing he be free from lesions of the skin and mucous membranes, may procreate a perfectly healthy child, because he cannot inoculate the mother, and a non-syphilitic mother never brings forth a syphilitic child—she cannot.

Dr. Batten: I have given a great deal of thought to this subject. The presence of the syphilitic germ depends a great deal on circumstances; upon the temperament and the constitution of the patient. In the discussion of this question we have to depend a good deal upon the truthfulness of our patients. It is impossible to watch a patient carefully; we must depend a great deal upon his veracity. Now I believe syphilis may be conveyed a long time after the patient has contracted the disease. For instance, a man had contracted syphilis in about 1869. He married in 1882 a very plump and healthy woman, who weighed about 120 pounds. Shortly after she conceived, and gave birth to a child. Some time during her pregnancy she took syphilis, and I treated her. The child was born healthy, but the mother was reduced to ninety-five pounds. She had a second child, and the second child is healthy. Both of these children are healthy, although the man's appearance denotes that he has syphilis, and denoted that before he was married.

Another case was a man whom I treated for the disease twice. He went through the usual course. He married and his wife has had three children, and they are all healthy. The wife is a healthy, fine looking woman and is well.

Another case that came under my observation was a young man who had the disease. He married and impregnated the wife, and the child was dead in the uterus. Before her next pregnancy I put her under treatment, and since that time her children have all been born healthy, and all are healthy and living at the present time. I believe, and my experience bears me out in my belief, that a person once syphilitic is always syphilitic, and that the disease may be conveyed through any of the secretions of the body.

Dr. Green: I have no criticism to offer on the paper. I believe my observations would lead me to agree with the paper. I might state an example or two that have come under my observation. One case occurs to me in reference to the length of time that the poison may remain in the system and be conveyed to others. I remember treating a young man quite a number of years ago—I think some seventeen, probably eighteen—for syphilis; he went through all the usual symptoms, primary and secondary. I told him not to marry for at least three years. I was not aware there would be no danger at that time, but I supposed the most dangerous period would be passed; but he married short of three years—two years and eight months. I attended his wife in confinement, but failed at any time to observe any syphilitic symptoms in the first child. I attended her in seven confinements, and I never saw healthier children than these. They are all living to-day. When I see them I fail to see any symptoms in any of them; and to show you how violent an attack of syphilis this young man had, he resigned his situation and left the city and went into Maryland while the eruption was on his face. He was completely discouraged during the first year of his illness; it seemed to break his entire constitution, and I cannot tell how it happened these children are so healthy. The father of the children was killed about a year ago. About three months ago I saw the mother of the children, and according to my observation she has never shown any symptoms of syphilis. I could mention numerous instances similar to that.

Dr. Shillito: In 1883 a gentleman came to my office who, at that time, expected to be married very soon, and related this history: He told me that during the war he was a clerk in Washington City. He had contracted syphilis and had been treated by what he considered the best physicians he could find. He came to Pittsburgh and up to that time had one attack of iritis; he had also had a skin eruption. When I saw him he seemed to be a man of average health. The nasal septum was perforated. I told him after so long a time and after having received so much treatment, that there was no particular danger of transmitting it to his offspring. He married. I attended his wife in confinement and delivered her of a living child. I think about one-third of the epidermis of the face had gone and one eye was entirely gone. The other eye was wanting until you could only see a little coloring of the cornea and one spot that seemed to be as large as a pin-head, but since that time it admits a little light. That child enjoys good health, most excellent health, up to the present time, although of course permanently blind. I took special care to watch the mother both before and after for any marks of syphilis. I have knowledge of her ever since until up to a very short time ago, but I have not seen her within a year or two. She has had no evidence of syphilis. I understood about a month ago that she had become insane, or troublesome, and had to be taken away to some asylum. They had but one child. He contracted syphilis during the war, and the child was born in September, 1884.

Dr. Thomas: What was the form of the trouble with the child?

Dr. Shillito: The epidermis of the face was nearly half gone. One eye was entirely gone and the other had just a stump.

Dr. Williams: It may be that the original trouble contracted in Washington City was not syphilis. He might have had bubo, and not had syphilis after all. There might be a suspicion that he contracted syphilis a year or two prior to his marriage, and I think it is certainly a fact that a person may contract syphilis and not have any perceivable primary lesion. I am certain of that. I have had some experience in some of these cases, and it would certainly bear out the statement made by Dr. Thomas; and I could relate a number of instances to substantiate my position. For instance, in one case a young man had syphilitic trouble in 1883, and about the beginning of 1884 was married and his wife was delivered of a still-born child about the beginning of 1885. About ten or twelve months after she had another still-born child. About a year after that she was delivered of a living child. About 1887 and within the past two years I have attended her twice, and her children are apparently healthy and doing fine. This was some eight years after the father contracted the disease. I am certain that if a case is properly treated the liability to convey the disease disappears after a period of three or four years. I think it depends on whether the patient has been properly treated. Unfortunately some of them are not well treated.

Dr. Lange: The matter introduced by Dr. Thomas is one upon which likely no medical body in the world would have one opinion in almost any aspect. For instance, Dr. Batten has said that temperament, disposition, or character has an influence in contracting syphilis—that a plump person with ruddy skin, blue eyes and light hair is more likely to take syphilis than a brunette. In other words, that the so-called lymphatic temperament is a predisposing cause. Now, a good many members here will not agree with that opinion. It may be that a patient of lymphatic temperament will suffer more severely, but I do not agree that such an individual will take syphilis quicker or more readily than a brunette. Dr. Thomas asserts that none of the secretions are contagious if the patient, after having syphilis, presents no symptoms. I have a family in my care where the father contracted syphilis after marriage and after having two robust, healthy children, he himself being a remarkably robust, healthy man, an oil-driller, and his wife being a strong, healthy woman. This man had two children when he contracted syphilis. He had treatment for three years, and at the end of that time presented no symptoms. Then he had two additional children born without symptoms; one of these is now about five years and the other about three. They have presented no symptoms of syphilis. Now he has a child eighteen months old, which is syphilitic very distinctly. It may not be fair to say with some members here that once syphilitic always syphilitic, but it is certainly remarkable that toward the end of life syphilitics who presented no symptoms for many years, again have this disease reassert itself, and often such assertion ends life. This comes as aneurism, apoplexy, atheroma, and as connective tissue hyperplasias of the brain, the liver, the cord, etc.

Dr. Barclay: My impression is, from what I have seen, that syphilis after the secondary stage is possibly not contagious, although I am not certain about that. It is not advisable for persons who have had syphilis to marry short of three years after the syphilitic manifestations have disappeared; that has been my rule, to advise persons who have had syphilis not to marry short of three years after all manifestations have disappeared. I have said to them with a good deal of confidence that I thought it would be safe after that time to marry. I saw recently a young girl who was poisoned by a dentist. The dentist who extracted her tooth abraded her lip. I saw her three weeks afterward, and my opinion was after I examined her that she had been poisoned. I was careful not to give her a positive opinion, but advised her to see other physicians. They were of like opinion, advising me to watch the patient for manifestations. The secondary manifestations came on in about sixty days afterward, and there is no question she was poisoned in that way. She said the dentist hurt her lip at the time he extracted her tooth. To me it was a very interesting case. I have treated her since and her hair has dropped out. This case was referred to a lawyer, and in all probability there will be a case in court. I have placed myself in a position of security by having her see other physicians; three or four other physicians have examined her, so if it comes into court, the profession may be protected.

Dr. Buchanan: I have nothing to say on the subject introduced by Dr. Thomas. but I have a word to say about the case which was reported in which a dentist was charged with having introduced syphilis by means of his instruments. We all know the variety of ways by which an abrasion of the lip can be made. I think if this case should come into court, the plaintiff would have the very greatest difficulty to prove even that it was shown that the abrasion on the lips of this patient was the site of the chancre, showing that the inoculation was made by the instrument that produced the abrasion. Suppose this girl had a family friend who had something on her lip, and that she kissed that friend good-bye at a station about the time when she received the injury at the dentist's, she would have received this inoculation, and the dentist would have to bear the blame. This girl might have received the inoculation by a drinking-cup; she might have wiped her face with the towel that the servant girl had used; she might have received it in a thousand ways, and still this dentist must bear the blame. I think, as we use instruments ourselves, we should be exceedingly careful of implicating in any way any member of the cognate profession of dentistry.

Dr. Barclay: I appreciate what Dr. Buchanan has said, and I have been just as careful as he could be. It seemed to me, from the history of the case, that she was certainly poisoned by the instrument. I know and appreciate just as highly as any one could, how much danger there is to the dental profession and the medical profession from this very cause, and I very carefully looked into that matter, and I am well satisfied when I say, I believe she was poisoned by a dentist's instrument. The history of the case goes to prove very clearly that the lip became indurated the third day, that there was a large lump in her lip, and the glands were sore. Of course what Dr. Buchanan said is true: she may have kissed a friend. I inquired as to that, and I am satisfied, if she was poisoned by any other means except the one referred to, she was innocent of knowledge of it.

Dr. Buchanan: According to this statement, the chancre appeared on the third or fourth day after the inoculation. We all know that that is entirely too short a time. We know if we inoculate a person with syphilis, it never appears on the third or fourth day; it takes a good while longer. If it appeared on the third or fourth day after the dentist extracted the tooth, then he did not inoculate her.

Dr. Barclay: Morton, in a recent work, states it may make its appearance on the first up to the seventieth day.

Dr. Davis: I would like to ask the Society if any one has known a case of syphilis to be communicated after the third year to their children, or any one else; that he can say, of his own experience, syphilis has been communicated after the third year?

Dr. Williams: I have in my charge a man who was married seven years ago, who had an eruption on his body. He had a chancre, but did not give it any attention. About six months after the manifestation of syphilis, after the rash manifested itself, he married, and in due time a rash of a similar kind came over the wife. He was then taking anti-syphilitic treatment. I do not remember the exact year, I think three years after his marriage, his wife was delivered of a child, and, unlike the cases reported by Dr. Thomas, there was a manifestation of syphilis on the skin, entirely covering the child. The child died in about three weeks. Four years after this, the man was presented with another member of the family, and a like condition exactly was manifested in the child. During this time he was taking anti-syphilitic treatment.

Dr. Lange: I stated a case a little while ago, and forgot to say that during the time these three children were conceived and born, the mother had not at any time any manifestation of syphilis; never at any time. Two of the children are healthy, the last one syphilitic, and the mother at no time presented syphilis.

Dr. Davis: Do you know whether she could have taken syphilis?

Dr. Lange: She never had symptoms.

Dr. Green: Can you exclude all evidence of a nurse, or some of the attendants, not conveying it to the child? I have seen a number of instances myself where the mother and father were clear, yet the child was syphilitic.

Dr. Lange: These children were fed with bottles, in the hope that, if taken away from the mother, it would lessen danger in the first two, and the third child was nursed.

Dr. McKibben: On the 2d of August, I delivered a woman whose husband was treated for syphilis about six months, when he got careless and stopped treatment. After three months he had mucous patches in the mouth, for which I treated him. He was anxious to get married. I told him it would not be advisable, but after a period of about eighteen months he married; his wife became pregnant, and the child was born on the 2d of August, perfectly healthy, and the mother has not shown any symptoms.

Dr. Shaw: I have in mind four men who had syphilis before marriage. Three of them had it severe enough to warrant a visit to the Hot Springs. They have all married, all have children, and none of the children have ever shown any manifestations of syphilis. I cannot give the exact time in any one case, but an interval of at least three years from the time of the first manifestations of the disease elapsed before marriage took place.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-Therapeutic Association, held in Philadelphia, September 24, 25, and 26, 1891.

(Continued from page 138.)

Morning Session.—Saturday, September 26, 1891.

Meeting called to order at 10:10, with President Massey in the chair.

Dr. W. F. Robinson, of Albany, N. Y., read a paper on

ELECTRICITY IN THE TREATMENT OF RHEUMATISM.

I have chosen this subject, which is somewhat out of my line (nervous diseases), for it seems to me to have been very much neglected.

One principal reason for this is, that electricians are, almost without exception, nerve specialists; at least they are so on the other side. As such, they preside over nervous clinics, and if, by chance, a rheumatic patient should apply to such a clinic, he would probably be refused admission as an improper case, and sent elsewhere. The result is, electricians seldom, if ever, have their attention called to this disease, and have little experience in its treatment. In the large Vienna clinics I saw but few cases of rheumatism treated by this agent, in comparison to the enormous number of nervous cases. In one of the Paris clinics, however, they made quite a specialty of rheumatism, and treated a large number of cases by electricity, with most gratifying results.

Altogether, I saw enough to convince me of the value of the treatment, and since my return I have seized every opportunity to treat this disease in order to bring out the therapeutic value of electricity in combating it.

My object in this paper shall be to set forth as clearly as I may the practical therapeutic indications and technique for the use of electricity in the treatment of rheumatism. I do not include the acute inflammatory form, as I have had no experience with electricity in its treatment.

Treatment.—In regard to the treatment of rheumatism, I divide it into two classes: 1st. Cases in which only one or two joints are affected, which I always treat by means of galvanism. 2. Cases in which the rheumatic poison is more extended in its action, involving joints, muscles, fascia, etc. Here I use static electricity.

This is a most unscientific mode of classification, but I do not intend it as such. My method is based on clinical experience. This first form may be typified by rheumatism of the knee, which is so common, and at the same time so important, that I shall take it to illustrate the method of treatment for joints in general. The question of electrodes naturally presents itself, and is very far from unimportant. It is just here, it seems to me, that the general practitioner often fails. He tries to give electrical treatment with nothing, perhaps, but the little sponges which have come with his battery, and then wonders why he does not get the results which his works of reference lead him to expect.

The electrodes should be large—the larger the better—and carefully made. If covered with sponge, it should be soft, and free from gritty particles. Every effort should be made to increase the conductivity of the skin. In order to do this, a hot solution of bicarbonate of soda should be prepared, and before the electrodes are soaked, all the other preparations, as to the patient, battery, etc., should be made. Now saturate your electrodes and apply them quickly, and you will be able to use warm fluid. Both the skin and the electrodes should be thoroughly wet, and in order to avoid wetting the clothing, I wind a towel tightly around the leg just below the knee.

Neglecting these things, and then trying to drive the electricity through the skin by means of strong currents and high voltage, is a great mistake for several reasons:

First. You are very apt to injure the skin, producing ulcers and sloughs, which take a long time to heal, and cause endless pain and annoyance to the patient. Then the treatment is so painful that the patient will very likely come to the conclusion that the remedy is worse than the disease, and give it up.

Finally, it is very much more difficult to properly regulate the treatment and to judge of its effects with the barrier of the highly resisting skin between us and the parts we wish to reach. Were this barrier out of the way, or had we some efficient means of reducing its resistance to a small amount, our treatment would not only be simplified, but would be made much more efficacious. I believe we must do this before any great advance in the use of galvanism will be obtained, and I have already given a good deal of time and thought to the subject myself.

Now to the dosage of the electricity. Any joint where you can apply the ordinary hand sponges, such as the knee, shoulder, wrists, etc., may receive from 12 to 20 milliampères. With these methods you will find it difficult to apply any more without having serious trouble with the skin. I believe we should obtain better results by the use of somewhat stronger currents, but with our present imperfect system of electrodes, I doubt if their use would be advisable.

Choice of Method.—Now as to the use of the three methods which we have at our command, viz., the constant current, the interrupted current, and voltaic alternation.

Here I branch off into theoretical considerations as to what the action of electricity is in these affections. We are well acquainted with the caustic action of electricity as seen in Apostoli's procedures. We understand the electrolytic action which consists in the breaking up of chemical compounds. Both of these actions are to be avoided in the treatment of rheumatism. We do not wish to produce an eschar; neither do we wish to decompose the fluids of a joint.

There is another and very important action, however, of whose existence we know, but do not fully understand. It may be termed the action of vital stimulation, by which all the vital functions of the organism, such as circulation, innervation and absorption are stimulated and urged on to increased activity. This is the action "par excellence" which we wish to obtain in our treatment of rheumatism, and in order to obtain it, we need to use the procedures of interruption and voltaic alternation. I believe we have now arrived at a point where specific directions must stop, for beyond this each physician must go alone.

Thus far it has been rather plain sailing regarding the electrodes, dosage, etc. Now we have at our command these three forms—the constant, the interrupted, and the alternating currents. They all possess this vital stimulating action, but in a degree which certainly varies with the peculiarities of the individual organization. I have seen cases, more especially in women, of nervous, sensitive organization, where every attempt to use interruption or alternation of the current only produced increased irritation in the joint, in addition to increased pain at the time of application. These same cases would go on and make good recoveries under moderate doses of say 10 milliampères, and the use of the constant current alone. The explanation of this, to my mind, is very clear, the moderate dose of galvanism being a sufficient stimulant to the vital functions to enable them to overcome the morbid conditions. Another case, especially if it were a chronic one, might have this same treatment for weeks without receiving any benefit, whereas a stronger dosage, with the aid of alternation, would have produced satisfactory results.

Voltaic alternation is a still stronger stimulant than interruption, but it must be used with caution, for with strong currents the pain and irritation are very great.

Some time ago I was consulted by a middle-aged man who was accustomed to have an attack of rheumatism every spring, which would lay him up for three or four weeks. It came in different parts of the body, but this attack was in the great toe. He was unable to wear a shoe on the foot, and could only hobble painfully about by means of canes. Three 10-minute applications of a 10-milliampère galvanic current removed the trouble entirely, so he could wear his shoe and discard his canes. One week later, there was a slight return of the trouble, which was dissipated by one treatment. I have seen a great many similar cases, and I do not hesitate to deduce from them the following principle: Joint rheumatism, pure and simple, is almost powerless to withstand the direct application of the galvanic current.

Static.—Let us consider now the second class of cases, where the disease is more diffused, and involves various tissues and organs in different parts of the body.

In this class of cases I put my trust in static electricity, though I am well aware that many electricians do not believe in its efficiency. Just here let me say a word about the vexed question as to whether this form of electricity penetrates the body or not.

Many people seem to have the idea, on account of the well-known fact that static electricity, when at rest, will collect on the outside of a body, therefore it cannot penetrate into the interior, and that the internal parts of the human body cannot be reached by it. I firmly believe that this conclusion is illogical and absurd. It not only penetrates, but it is the most penetrating of all the different forms in which this force manifests itself, since it makes its way through all kinds of matter, whether a conductor or not. This class of cases is somewhat different in nature, and my method of treatment is entirely different. Not only are the lesions more numerous, but they are less obstinate, as a rule, and more apt to shift their location. If I may be allowed to choose a type for this class which I have so arbitrarily created, it would be a case in which the trouble was centered in the lumbar and sacral regions. This is the favorite spot for muscular rheumatism, probably because the muscles of these parts have so much hard work to do, and are so constantly employed. Let us take a case where there is pain and stiffness in the back; worse after sitting; pains running down the thighs, and at times in the knees; also pains in one shoulder, and in the corresponding side of the neck. If you should set out to treat this case with galvanism, you would have your hands full. The patient, whether a gentleman or lady, is obliged to remove or disarrange a great part of the clothing, and the various parts of the skin where the direct applications are made must be thoroughly soaked with the solution. When this is done, it is almost impossible to avoid wetting the underwear, and as the patients have to go out, perhaps, into the biting air of a winter's day, the results are often disastrous. I have seen an attack of rheumatism brought back by just this thing.

Another risk would be that of filling the system so full of this powerful fluid as to produce serious depression, which would have a highly injurious action on the rheumatism, since it is in itself a powerful depressor of the general vitality. On the other hand, let me say that certain persons cannot stand static electricity, so that in such cases galvanism would have to be employed in spite of its disadvantages.

In treating with static electricity the clothing does not have to be disturbed, as this agent is strong enough to penetrate it. In the treatment known as the general charge, the patient simply sits upon an insulated platform, while the electricity flows through every part of the body. I believe the general charge alone has an important therapeutic action in rheumatism, being comparable, to a certain extent, with the constant current, and I have seen it do good work in the case of old persons who were too feeble to stand the treatment by sparks. I have had under my care during the past winter a lady over 70 years old, suffering from rheumatism of the legs. After a short course of treatment, consisting of the general charge alone, the pain left her almost entirely, her ability to walk greatly increased, and she was altogether much more comfortable.

Sparks.—The general charge is rarely used alone, and static electricity is usually given by means of special electrodes, in the form of sparks. The question as to the use of these different electrodes is mainly one of degree. The mildest of all is the metallic point, which can hardly be called a spark-giver, since the electricity almost flows from it in a kind of stream. Next comes the carbon point, then the small metallic ball, then the large ball, which gives a very powerful, and, to those not accustomed to it, a painful spark. Now, as to more specific directions; suppose a case with pain in the back, neck, thighs, etc., should present itself for treatment, how should it be attacked? Before placing the patient upon the insulated platform I always listen to the heart and satisfy myself that the sounds are normal. I then apply the general charge for five or ten minutes, and my first treatment is finished. If the patient has any idiosyncrasy against static electricity you will discover it, and act accordingly. If the patient has felt no ill effects, I begin with a mild electrode, such as the carbon point, and apply direct sparks to all the painful regions. It is infinitely more convenient to do this than to apply the wet sponges to the same regions. I give most of my attention to the lumbar and sacral regions, for I find this is usually the stronghold of the malady. It is well, also, to give a few sparks up and down the spine as a stimulant, or, more properly speaking, a tonic, to this important organ. If the joints are affected, I handle them very lightly, scarcely touching them at all, as they are especially sensitive to this form, and it does not act near as well on them as does galvanism. As I said before, however, the different local lesions are not as obstinate in this form, and the joint affections are apt to disappear along with the others, even though they have not received very much separate treatment. As the treatment goes on, you will be able to give stronger sparks, until the patient is able to bear, and even enjoy, the heavy sparks from the large ball electrode on the very spots which were formerly so sensitive. It is always a very encouraging sign when this tolerance appears, as it is a strong indication of the curative action of electricity. While the local pains are growing less, there will be noticed, also, a marked change in the general condition. Patients suffering from general rheumatism are usually in a very bad state of health, the internal organs being poisoned by the rheumatic products circulating in the blood, just as the joints and muscles are. It is just here that the electricity has a most important action in stimulating the different organs to better performance of their functions, and thus improving the general health. It is for this reason that the sparks to the spinal cord are advised. In persons of a neuropathic temperament the action of the rheumatic poison upon the nerves is sometimes very strong. Not only do they become specially nervous and irritable, but there is often present marked depression of spirits and loss of interest in life. As a rule, they have no idea what the cause of this condition is, and they naturally conclude there is no hope for them. During the past winter I have had a somewhat remarkable case, in the person of a lady in middle life, who had suffered with rheumatism ever since her girlhood, more than thirty years. She had rheumatism of the most general character, affecting off and on all parts of the body. She had become despondent, and took no interest in life. After a month's treatment by mild static sparks to the spine and other parts of the body, she felt like another person.

I usually give these treatments every other day, unless there is some special reason for hurry, as in the case of persons leaving the city, and then they may be given every day. The usual length of the treatment is ten minutes, about five minutes sparks, and the rest of the time the patient simply sits quietly upon the platform and takes the general charge. Cases of long standing, or those who have taken this form of electricity before, sometimes receive sparks for the whole ten minutes. But here again comes the point, just as in the case of galvanism where specific directions are almost impossible, but where the physician must rely upon his experience and observation. Some people are excessively sensitive to Franklinism, just as others are to galvanism. A short time ago I was treating a patient for rheumatism, and the first treatment, which only lasted five minutes, brought on a return of her courses, although she had them only two weeks before. Some patients will never be able to stand more than the small brass ball, but they will nevertheless make satisfactory progress and ultimate recovery under the treatment.

A Word on the Auxiliary Treatment of the Disease.—I believe that electricity has a two-fold action which meets all the indications of rheumatism — specific action against the morbid process and a general tonic action which tends to build up the system depressed as a result of the disease. For this reason I do not think it necessary to give tonics during the treatment. As to the ordinary anti-rheumatic drugs, such as the alkalies, the salicylates, etc., I have never found that they assisted the action of the electricity to any great degree, and so do not give them. There is one thing that I do advise, however, and that is the use of some good mineral water. I consider Carlsbad and Londonderry the best.

Conclusion.—In conclusion, let me say that I believe this subject of rheumatism offers a splendid field for investigation and discovery. Its electrical treatment is now only in its infancy, but the good results already obtained show what we may hope for in the future, when a wider experience and a fuller knowledge shall have increased our skill.

Dr. Nunn: I wish to commence the discussion of this paper, which is of great value and interest, as all the others have been. There is a point, however, which I desire to bring before the Association, and that is why I have ventured to commence first, so that others may have an opportunity to discuss the question. It is one I am particularly interested in, as I think also are the other members of the Association. I allude to the penetrating power of the static current. There are two schools that have been well brought forward by Dr. Robinson, one of which takes the position that all static currents are on the surface, and the other that it penetrates.

If we can prove clinically that the current does penetrate the human system, I think it would be a great point in advancing this matter. In proof of its penetrating powers I will cite a case. A patient that had been suffering a great number of years from various symptoms, ultimately developed, quite unexpectedly to himself, a curvature of the spine on the right side, in the lumbar region. There was a hard tumor, appearing almost like bone, and absolutely without sensation. The muscles on that side of the back were practically dead, and ossified and paralyzed. For months, various applications of faradism were made, and various electrodes were used without result; likewise with galvanism in various forms—interrupted, continued, etc. High ampèrage was used, as high as the neighboring parts could stand, until in some instances the moving electrodes had cauterized, and the skin was parched and hard. That gives a good idea as to the strength of the current. All of this was of no value; the boss was there, the swelling was there; all the symptoms were there, and it was of no value whatever. Then we turned to the static current, and a 12-plate Bergh machine was used, giving a 4-inch spark. It was passed over various portions of the body with the clothing on, and it passed all right; when it came to that boss, no spark passed. Now, had that current simply been on the surface, it would have passed quite as well over that spot as it did an inch or two away from it; that is to say, if we have a ball hollowed out and filled it with a metal, if the current goes only on the surface, it would pass over the surface of the copper ball, no matter what the contents. If you fill it with wood, it will pass over it just the same. If the skin alone conducted the static current, what is below the skin makes no difference. If, on the other hand, it goes through the body to an opposite point, it is evident that the interposition of a non-conducting substance would effectually stop the current, which it did in this case. Therefore here is a case where, beneath the skin, was a non-conducting substance a 4½-inch spark refused to pass. I think this is important: It was applied outside of the clothing, then all the clothing was removed, and it was applied directly, and still it did not pass, the spark did not go round, the action of the machine stopped. This spark was passing from prime to prime conductors 4½ inches, but when you came to this spot, the machine ran on and the current did not pass; it did not pass 4½, nor 2, nor 1, nor a quarter of an inch. That point was brought out, I think, in the paper, and I made a note of it at the time. I will not occupy any more time of the meeting with the other points, but that was an important point, and a most original one, I think.

Dr. Bigelow: I say to my sorrow, that I am a victim of rheumatic gout. When in Paris, I was suffering very greatly, and I had undergone two treatments at Carlsbad, and I took the advice of Thompson. I had tried Vichy water, which I may say is practically useless, and does more harm than good. For the pain in the joints I used static electricity from the small ball, and I had immediate cessation of pain. The application was very painful, but not nearly as painful as the pain itself. From that static current I obtained immediate relief, but I did not find it curative, but simply palliative.

I think, if we addressed ourselves more to the liver and less to the kidney, we would get better results.

Dr. Goelet: It is rather out of place for me to say anything as to the value of electricity in rheumatism, but I think the galvanic current is very satisfactory, and I wish to call attention to the fact of duration of applications. The sedative effect of galvanism, I find, can be obtained by currents of short duration. You get a much better effect than when long continued, for after a time you get an irritative effect, and I believe that you get better effects from applications from three to five minutes, and certainly much better than those of ten minutes.

In defense of the clay electrode, I think I have seen it used satisfactorily. When I went to Paris and saw Apostoli's electrode, I tried to improve upon it. It was necessary for me to have an electrode which could be applied agreeably to the patient, and for this reason I did not use Apostoli's, but a modification of it. And instead of making it as he does, I mix the clay to the consistency of putty, and it can be kept so by keeping it moist. You make a flat pad by rolling it on a board as a cook does dough, and get it into shape, and then, after placing a metallic cover on it, it is covered by a layer of absorbent cotton. Then it is sewed up in a gauze cover. On the back I place rubber cloth, just as you find in sponge protected electrodes. With this you have but one moist surface, so that you do not wet the clothing. The objection has been made to absorbent cotton that you neutralize the benefit, but that is not the case; the cotton holds the moisture for some time, and if you lay it down on marble or zinc surface, it will retain its moisture for months, and the clay is kept in a moist condition, so that the benefit of the clay is retained. The clay percolates through the cotton, but not sufficient to soil the surface of the patient, and you do not have to wash off the abdomen. You get better contact, as it fits better to the surface. It is all ready for use by my adaptation. Another objection has been made to it—that it is cold, and that there is difficulty in keeping it warm, but I have got over that. I have made a warming-pan, a zinc jug of the size of Webster's dictionary, and it is fitted to it, and you can set it on the surface without damaging anything. This always keeps it warm, and you have the pads warm and moist. You need not always use the large clay electrode, but you can have them any size, from 1 to 15 inches square.

Dr. Walling: Dr. Robinson has referred to the effect upon the heart of the Franklin current. I have been investigating that somewhat, and in a number of cases I have found the effect of the static insulation on the circulation. My attention was first called to it by a patient complaining of pain in the cardiac region from positive insulation. I paid little attention to it at first, but its recurrence made me think that there was something in it, and the next time I tried the negative, and did not have that trouble. I have noticed that the positive has the effect upon the vascular system of constringing the capillaries, and thus acting on the circulation, while the contrary was experienced by negative insulation. Another particular patient, a lady, I placed on an insulated stool and used the positive current, and she made considerable complaint, and I then reversed the pole and she felt better, so I have come to the conclusion that there is a great difference in the effects.

Dr. Blackwood: I merely wish to refer to the clay electrode. We know that there are two objections to it: First, it is dirty, and another that by mixing water with the clay it is a poor conductor. The value of practical hints from electricians as to the question of resistance should be agitated. Prof. Houston suggests that if plumbago was mixed with the clay it would be a perfect electrode.

Dr. Morton: I am very thankful to Dr. Robinson for going over the general subject, and giving the general treatment, and bringing up the points he has in the practical way he has done. He has traversed very much the same ground I do daily in practice in New York and I have met the same difficulties, and have attempted to solve many of the same problems, and have appreciated the way in which he has met the difficulties and suggested their solution. I have very little fault, if any, to find with anything which he has said. I wish we had more such general discussions of practical methods; but I made a note of one thing which I would like to add to what the doctor has said. This entire question of getting larger currents through the skin is one that we are all coming to and have all considered. I believe that all the methods taken up by the doctor are practical ones. I tried bicarbonate of sodium in endeavoring to obtain cataphoretic action upon the tissues, and I thought I might produce local anæsthesia. I used twenty-five milliampères through my arm for fifteen minutes, and made a big blister; and I found that the soda application was very irritating, so I did not use that again. Perhaps it might have done with chloride of sodium with the same current. In practice I use as large electrodes as possible and try to get away from the small conventional discs sold by the manufacturer. I was surprised to hear Dr. Robinson speak of the dangers of taking in too much of the current, for I thought we all regulated that by the milliampère meter, and that we all knew how much was going in, as we should know exactly what we are using.

I would say in way of suggestion, and as a practical point that in taking up Althaus recently I saw there an historical account of the clay ball electrode. He made them non-polarizable with the sulphate of zinc, and he described how to make them, but that is not what I wanted to say (and this will please Dr. Robinson): to get a great current intensity through the body, Dr. Althaus says, take a large clay ball electrode and saturate with the sulphate of zinc, and he says you can get greater intensity through the skin than by any other way. He goes on to say that a current of fifty Daniell cells can be passed without pain through the skin. I shall try that when I go home, and if we can get rid of this barrier—the pain of the skin,—which is one of our great difficulties, it will be a great boon. This skin of ours, which was put there to keep out such things as electricity, I hope will be overcome; we will try then the clay ball electrode.

The doctor seemed to think that there was some influence to be derived from the current, owing to a peculiar principle which he seems to have invented or copied from some ancient work. That was the effect of the current on the vital principles. I thought we had gotten through talking of vital principles, on account of the great inexactness of the term. It is undoubtedly a fine principle and a beautiful thing, but I do not understand the value of using it, as we know nothing about it. I do not understand the use of talking about it, these vital principles or vital fluids, or whatever you might call it, as those fluids or principles are very difficult to conceive of. He seemed to think that there was a difference between the ideas which I suggested yesterday of the chemical treatment and of those which relate to the vital principles—why, Mr. President, I think they are the same thing, and that the chemical principles are at the bottom of the vital principles, and I think it is the chemical principles we are to look to as the nearest point by which we can reach the vital principle—whatever that may be. So, after all, I think his point against me is not so well taken and, I think, if he studies the matter, the vegetative character of the cell and the chemical principles are more important than the vital fluid.

Static electricity, the hobby of my soul, he refers to and I wish merely to corroborate what he has stated, that he did believe the current penetrated the human skin. The best evidence of that, in corroboration of his statement, is the effect on muscle. If I give a four-inch spark to the forearm and a person is holding a ten-pound dumb bell and he raises that dumb bell every time I give a spark, I defy anybody to explain how that dumb bell is raised unless the biceps contract from the spark, and that it can be done without stimulating the biceps, and by the current going through the skin. It seems to me that upon a basis of physics it is puerile. There is every law in physics and electricity why this statement that it does not pass should not be true, and I could give them all to you. The experiment on the biceps and that related by the doctor, which I wish I could explain.

The question of rheumatism and gout opens up a vast question. I only know that he seems to think the two diseases are of the same nature. I suppose it is generally admitted that we have uric acid in rheumatism and the urate of soda in gout, and there, I think, is the great power of electricity—that is, that we can restore the tissues so that they resist these poisons. You speak of anæmia of the patient. It is known that in the rheumatic diathesis you have great weakening of the blood globules. He speaks of the reappearance of the menstrual function, and I have seen cases where it has been delayed and I have found the static electricity very useful.

In muscular rheumatism the action is marvellous in restoring the condition of the patient, and it is simply due to the remarkable effects of static electricity in restoring the equilibrium of the person, just as by a trip to Europe or a work in the garden.

Dr. Newman: I have but little experience with electricity in rheumatism, and I wish I had not that. Nevertheless, I must confess that the subject is of great importance. I hope it will be brought out of its infancy to greater usefulness. The subject has interested me very much, but I wish the author had made some of his points more clear to the general practitioner, and I suggest to the Doctor that he explain what alternating and interrupted currents are. All of us here, of course, know, but the general practitioners do not, and I would like to have the different methods explained. Rheumatism may be muscular—it may be confined to the muscles, but it may be found in the joints, and I think that the treatment should be different in these cases, as the deposits are different in character—sometimes uric acid, sometimes alkaline in character—and it seems to me that the electrolytic treatment should not be entirely disregarded. Edison has made some experiments to disperse these conditions of the joints. He used it more as cataphoresis to dissolve these deposits. I hope the Doctor in summing up will mention these different ways, and perhaps add to his valuable paper.

Dr. Hayd: I should like to ask whether the Doctor made any difference between the negative and positive poles. In any form of rheumatism you have deposits, and in order to banish any deposit in any joint you must have a certain effect. In a general way the deposit in chronic forms of rheumatism is very different from that in acute rheumatism. In acute rheumatism we have to use alkalinity to produce an effect, so we use the negative pole to the joint, and that is where again those beautiful laws which Dr. Morton brought out yesterday hold good. If there are urate or uric acid deposits you need alkalinity for the same reason. There is some action which needs definite application, and that is again the negative pole. While the paper was covered very nicely, the subject was too general, and nobody can derive any value unless things are classified and the polarization is mentioned, and I would be much obliged if Dr. Robinson would explain himself.

(*To be Continued.*)

NECROLOGY.

Dr. Robert Carson Hewitt, of Louisville, died on the 22d of December last, from influenza followed by pneumonia. He was the senior physician of his city, and honored by his colleagues not only for his years, but for his ability, integrity and good judgment. A memorial drawn up by a meeting of physicians, on the day after his death, recounts their admiration for his character in terms of warmest eulogy. Among other characterizations, it says: "Dr. Hewitt was a remarkable man. He may be said never to have grown old. Though his age was that of the Psalmist's limit, he was erect and firm in his carriage, without a wrinkle, cheery and boyish in disposition, with no suggestion or appearance of senility. He was neat in apparel, exact in judgment, tenacious in memory, and with a face and form typical of manly beauty. Methodic and abstemious in his habits, careful of his health, he rarely lost a day from his professional duties. He was not only revered and admired by the profession of Louisville, but he was almost adored. Because of his rare attributes of head and heart, he had for many, many years past become a necessity to his *confrères*."

Dr. Hewitt was a native of New York City, but his life had nearly all been passed in Kentucky. He was graduated from the Transylvania University in 1844, since which year he had been a resident of Louisville. The medical men of that city attended his funeral in a body, so as to testify that he had been their most honored member.

Dr. William C. Shurlock, late of Fargo, N. D., died January 17, in this year. He was born in Enon Valley, Beaver county, Pa., January 10, 1835. While yet a young man he graduated from Jefferson Medical College, Philadelphia. At the beginning of the civil war he joined the northern army, and was commissioned a captain in the 51st Regiment Pennsylvania Volunteers, and subsequently became the surgeon of the 100th Regiment Pennsylvania Volunteers. After the war he located in Beaver Falls, Pa., where he built up a considerable practice, besides becoming prominent in the politics of the State and serving several terms in the legislature, in which he occupied an exceptionally distinguished position.

He was married in 1858 to Miss Rebecca Dilsworth, of Beaver Falls, who survives him, with a family of nine children, four sons and five daughters. In 1880 he removed with his family to Fargo, and became a permanent resident, with a large practice, as well as an active participant in all the material interests of the city. He was a staunch Republican in politics, a G. A. R. man, President of the U. S. Pension Board ever since its organization here, in 1882, at his death President of the Medical Association of the State of North Dakota, while his term as President of the Cass County Medical Society had just expired for the year 1891.

He filled well his sphere of life, and commanded in an unusual degree the respect and esteem of his fellows. His widow and family have the sympathy of the entire community in their great affliction.

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1271, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, FEBRUARY 6, 1892.

AMERICAN MEDICAL ASSOCIATION.

The Forty-third Annual Session will be held in Detroit, Mich., on Tuesday, Wednesday, Thursday and Friday, June 7, 8, 9 and 10, commencing on Tuesday, at 11 A.M.

"The delegates shall receive their appointment from permanently organized State Medical Societies, and such County and District Medical Societies *as are recognized by representation in their respective State Societies*, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, County and District Medical Society entitled to representation, shall have the privilege of sending to the Association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number. *Provided*, however, that the number of delegates for any particular State, Territory, county, city or town, shall not exceed the ratio of one in ten of the resident physicians who may have signed the Code of Ethics of the Association."

Members by Application.—Members by application shall consist of such members of the State, County, and District Medical Societies entitled to representation in this Association as shall make application in writing to the Treasurer, and accompany said application with a certificate of good standing, signed by the President and Secretary of the society of which they are members, and the amount of the annual membership fee, five dollars. They shall have their names upon the roll, and have all the rights and privileges accorded to *permanent members*, and shall retain their membership upon the same terms.

The following Resolution was adopted at the Session of 1888:

> That in future, each delegate or permanent member shall, when he registers, also record the name of the Section, if any, that he will attend, and in which he will cast his vote for Section officers.

Secretaries of medical societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the Permanent Secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the Secretaries *are, by special resolution*, requested to send him, annually, a corrected list of the membership of their respective societies.

AMENDMENTS TO THE BY-LAWS.

Offered by Dr. I. N. Quimby, New Jersey:

> That Thursday morning's general session be omitted, and the time be devoted to Sectional work.

By Drs. J. G. Kiernan, Illinois, and H. St. Ash, Pennsylvania:

> That the Committee of Necrology be abolished, and the work of that committee be made the duty of the editor of THE JOURNAL.

By Dr. J. C. Culbertson, Illinois:

> That all business matters of the Association be referred, without discussion or comment, to an Executive Committee, composed of two members to be appointed by each State Society in affiliation with this Association, who shall carefully consider and recommend such action as they may deem most advisable.
>
> That the time of meeting of the Sections be from 9 A.M. to 12 M., and from 2 to 6 P.M., and that the time of the general sessions shall begin at 12 M., and continue until adjournment.

By Dr. A. L. Gihon, United States Navy:

> That Wednesday be the day for delivery of the President's Address.

ADDRESSES.

On General Medicine, by Dr. J. S. Cain, Nashville, Tenn.

On General Surgery, by Dr. John B. Hamilton, Chicago, Ill.

On State Medicine, by Dr. Chas. A. Lindsley, New Haven, Conn.

Committee of Arrangements: Dr. Henry O. Walker, Chairman, 27 Adams Ave., East, Detroit, Mich.

SECTIONS.

"The Chairman of each Section shall prepare an address on the recent advancements in the branches belonging to his Section, including suggestions in regard to improvenents in methods of work, and present the same to the Section over which he presides, on the first day of the annual meeting. The reading of such address not to occupy more than forty minutes. . . ."—*By-laws.*

"A member desiring to read a paper before a Section, should forward the paper, or its *title* and *length* (not to exceed twenty minutes in reading), to the Chairman of the appropriate Section, at least one month before the meeting."—*By-laws.*

WILLIAM B. ATKINSON, M.D., *Permanent Sec'y.*
Philadelphia, 1400 Pine St., S. W. cor. Broad.

SECRETARIES OF STATE MEDICAL SOCIETIES, PLACE AND DATE OF NEXT MEETING—1892.

ALABAMA—T. A. Means, Montgomery; Montgomery, April 12.

ARKANSAS—L. P. Gibson, Little Rock; Little-Rock, June 2.

California—W. W. Kerr, San Francisco; San Francisco, April 19.

Colorado—H. W. McLauthlin, Denver; Denver, June 21.

Connecticut—N. E. Wordin, Bridgeport; New Haven, May 25.

Delaware—W. C. Pierce, Wilmington; Dover, June 14.

Florida—J. D. Fernandez, Jacksonville; Key West, April —.

Georgia—D. H. Howell, Atlanta; Columbus, April 10.

Illinois—D. W. Graham, Chicago; Vandalia, May 21.

Indiana—E. S. Elder, Indianapolis; Indianapolis, May 14.

Iowa—C. F. Darnall, West Union; Des Moines, May 17.

Kansas—W. S. Lindsay, Topeka; Fort Scott, May 3.

Kentucky—Steele Bailey, Stanford; Louisville.

Louisiana—P. B. McCutchon, New Orleans; New Orleans, April 12.

Maine—C. D. Smith, Portland; Portland, June 8.

Massachusetts—F. W. Goss, Boston; Boston, June 8.

Maryland—G. L. Taneyhill, Baltimore; Baltimore, April 26.

Michigan—C. W. Hitchcock, Detroit; Flint, May 3.

Minnesota—C. B. Witherle, St. Paul; St. Paul, June 15.

Mississippi—H. H. Harralson, Forest; Natchez, April 20.

Missouri—L. A. Berger, Kansas City; Perth Springs, May 17.

Montana—J. W. Gunn, Butte; Butte, April 20.

Nebraska—M. L. Hildreth, Lyons; Omaha, May 10.

New Hampshire—G. P. Conn, Concord; Concord, June 20.

New Jersey—Wm. Pierson, Orange; Atlantic City, June 23.

New York—E. D. Ferguson, Troy; New York, November 15.

North Carolina—J. M. Hays, Oxford; Wilmington, May 24.

North Dakota—G. E. Jackson, Grand Forks; Grand Forks, May 27.

Ohio—T. V. Fitzpatrick, Cincinnati; Cincinnati, May 3.

Oregon—C. H. Wheeler, Portland; Portland, June 14.

Pennsylvania—Wm. B. Atkinson, Philadelphia; Harrisburg, May 17.

Rhode Island—W. R. White, Providence; Providence, June 2.

South Carolina—W. Peyre Porcher, Charleston; Georgetown, April 28.

South Dakota—R. C. Warne, Mitchell; Salem, June 8.

Tennessee—D. A. Nelson, Chattanooga; Knoxville, April 12.

Texas—H. A. West, Galveston; Tyler, April 26.

Vermont—D. C. Hawley, Burlington; Montpelier, October 14.

Virginia—L. B. Edwards, Richmond; Luray, September 12.

Washington—E. E. Heg, North Yakima; North Yakima, May 4.

West Virginia—D. Mayer, Charleston; Clarksburg, May —.

Wisconsin—Chas. S. Sheldon, Madison; Milwaukee, May 3.

A GOUTY AFFECTION OF THE PENIS.

Sir Dyce Duckworth, President of the Clinical Society of London, reported at the January meeting of this year a case of gout of the penis, as he regards conditions summarized below. His patient was in St. Bartholomew's Hospital, aged 40 years, a glass-cutter by occupation, suffering from arthritis of the two great toes and other joints. No uratic deposits were present; pyrexia moderate. He had formerly been in a cavalry regiment, but had been discharged, on account of hernia, twenty or more years ago; had led a sedentary life; drank about one quart of beer or ale per diem. He had once suffered from lead colic. He had had occasional attacks of articular gout, and gave a history of having inherited the disease from the paternal side. On the first day of the present attack he had pain in right wrist and one great toe. On the following morning he awoke with pain in and a rigid erection of the penis, which continued up to the time of admission into the hospital on the fifth day, and soon afterwards his second great toe joint became painful. The urine was acid, of 1022 gravity, and non-albuminous. The thoracic and abdominal organs were found to be free from disease. The penis was erect, turgid, tense, and very painful. There were no irregular points of hardness, and the tests were normal. The perineum was void of swelling and pain. Calchicum and aperients were given internally; lotion of lead and opium applied externally; light diet. This treatment did not subdue the persistent priapism; micturition was painful, and soft catheters were required to be passed. A cage, or coop, was employed to prevent the impact of the bed-coverings against the sensitive organ. From time to time there were fresh articular attacks in different parts, with some transient rise of temperature. The duration of priapism was three weeks, when the condition gradually diminished in rigidity and painfulness, along with the general amendment of all the symptoms. This acute form of gout of the body of the penis is extremely rare. The author had not known of another case similar to that described by him, although he had met with affections of the testes, prostate gland, and bladder. The pathological condition was believed to be a thrombosis of the veins of the corpora cavernosa, with some inflammatory condition of the trabecular structure; a return of blood from the part being mechanically impeded during the blocked stage of the attack. Smaller thromboses of a like nature have been previously reported, but they have not lead to painful persistent priapism; they have produced small knot-like points along the body of the penis, which have slowly or imperceptibly disappeared. There is also a priapism, different from the above, sometimes observed in elderly men as a result of a very acid condition of the urine. This condition is readily removed by an alkaline treatment. The author holds that the case reported by him should be classified among the rarer forms of gout, of which gouty parotitis is another form. In the discussion following the paper, **Dr. Ord** stated that he had never seen an acute case of this affection, although he had observed the chronic variety. The important points of the case may be stated as, first, a gouty heredity; second, sedentary habits of life, with exposure to lead absorption; third, the habitual use of beer as a beverage; and fourth, the refractory course of the affection under the standard gouty regimen and medication.

TYPHOID FEVER IN CHICAGO.

The Health Officer of Chicago states, through the daily press, that an investigation made by him shows that only three deaths out of every fifteen reported at his office as being caused by typhoid fever is correct. This is about the worst reflection on the diagnostic ability of more than two thousand physicians that has ever come under our observation; but it parallels right along with the same official's statement that the lake water at the crib is free from contamination, as shown by chemical analyses made from time to time in his office.

Evidently the Illinois State Board of Health are quite skeptical in their belief of these official utterances, as indicated by their appointment of **Dr. John H. Rauch** as Sanitary Expert and Counsellor, with directions to at once examine and report upon the unsanitary conditions which are so productive of sickness, and the high rate of mortality from enteric disease in Chicago.

* * * *

It would be a right good thing for any one of the Chicago Medical Societies to appoint a good large committee of its best-known members to examine into and report upon the existing conditions in the Chicago Health Office. Official reports are either very valuable, because of their truthfulness, or misleading to the extent of actual criminality when fictitious.

Dr. Robert P. Bush, of Horseheads, New York, was elected speaker of the New York State Assembly, Jan. 5, 1892. Dr. Bush is the first physician who has held this high office. His preliminary education was obtained at the academies in Franklin and Cortland, and he graduated from the Medical Department of the University of Buffalo in the class of 1874. He has been in the active practice of his profession since that time, excepting during the winters that he has spent in the Assembly, where he is now serving his seventh term.

Electrical Death is Practically Instantaneous.—A medical declaration in reference to the recent execution by electricity at Sing Sing prison, in New York, has been officially filed in the appropriate bureau. It is signed by Dr. Ira Van Gieson, who had charge of the autopsy. He writes: "Rigor mortis was almost completely, if not entirely absent, except in the right leg. There were no discolorations, contusions or marks, except at the knee, where the electrode was applied and at the cheeks, where there were marks corresponding with the restraining straps." He further expresses the opinion that a current of 1,400 to 1,600 volts does not do any damage to the internal viscera, muscles or tissues. The thermic effects of the electrodes were limited to the epidermic layer, the cutis vera not being appreciably altered. The readings of the volt metre in this case averaged 1,716 volts for the four contacts made; and the average duration of the contacts was thirteen seconds. The first contact was fifteen seconds in duration and caused death. This result is therefore described officially as "practically instantaneous and apparently painless." There can be little doubt that execution by electricity, competently applied, is more humane than hanging, and about on a par with the guillotine or a volley of firearms, as in military execution.

Bequests to New York Hospitals.—Under the will of the late Mrs. Mary Stuart about $800,000 is donated to twelve medical institutions in New York and vicinity. The Presbyterian Hospital receives the largest single bequest, a sum estimated as not less $310,000. The Woman's Hospital and four others will receive upwards of $80,000, while a few dispensaries are remembered to the extent of $5,000. During her lifetime, also, Mrs. Stuart had given with princely liberality to some of these same charities; in no year, for many years past, falling below $100,000 per year for these and other selected objects. And all the while she led a quiet and retired life, with a single servant. Her will disposes of a total of four millions of dollars for religious, educational and protective purposes.

Membership in the American Pharmaceutical Association is obtained only by election at the annual meeting. "Every pharmacist and druggist of good moral and professional standing, whether in business on his own account, retired from business, or employed by another, and those teachers of pharmacy, chemistry and botany who may be especially interested in pharmacy and Materia Medica," are eligible for membership. For blank applications and further information, address Dr. H. M. Whelpley, 2729 Washington Ave., St. Louis, Mo., Chairman of Committee on Membership.

DOMESTIC CORRESPONDENCE.

Coffee as a Cause of Pruritus Ani.

To the Editor of the Journal of the American Medical Association:

The writer who described the interesting case under the above head-line, in the last number of The Journal, did not mention the kind of coffee that produced the pruritus ani.

In some cases, at least, one kind of coffee will occasion intolerable itching and consequent insomnia, while another kind can be used moderately without giving rise to any unpleasant symptoms.

I have had a case under observation, in which Mocha coffee in minute quantities will produce pruritus, while pure Java, in draughts of two or three cups a day, can be taken with no ill effects. If a small amount of Mocha be added—say 12 to 25 per cent.—the pruritus returns.

In this case, I found two remedies that relieved the itching and prevented the insomnia. Pure camphor-menthol, applied to the affected parts, relieved the pruritus, but left an unpleasant sensation of heat. By mixing it with 50 or 75 per cent. of lanoline, the burning sensation was avoided. The same results followed the topical application of campho-phenique, which, I understand, consists of equal parts of camphor and carbolic acid.

A professional friend, one of our most voluminous writers and a popular post-prandial orator, tells me that he cannot take champagne or wine without suffering from pruritus ani almost immediately after the beverages reach the stomach. Remembering this, I have often wondered at his easy, fluent language in entertaining an audience around the festal board at our professional banquets, at which his glasses were refilled as often as his neighbors'.

I have known lawyers to say they could never plead a case with their piles down. How can an after-dinner speaker make an address abounding in wit and humor, and boquets of rhetoric, while laboring with a pruritus ani?

S. S. Bishop.

70 State St., Chicago.

SELECTIONS.

Spasm of the Glottis.—Sir Morrell Mackenzie finds that by exciting a rival reflex, the laryngeal spasm is at once overcome. By exciting a paroxysm of sneezing, immediate relief is procured. This is best done by the inhalation of a pinch of snuff into the nares, or pepper may be used in the same way. It is sometimes possible to produce sneezing by tickling the nasal mucous membrane.—*Med. and Surg. Rep.*

By treating carious toothache by means of a mixture of equal parts of crystallized carbolic acid and flexible collodion, carried to the bottom of the cavity, the pain is said to disappear instantaneously.—*Clinique.*

Surgery of the Lung.—Dr. Tuffier has published an interesting clinical lecture on the Resection of the Apex of the Lung (*La Semaine Médicale*). He performed the operation for tuberculosis limited to the apex. Previously the author had experimented on animals to ascertain the feasibility of the operation. Being convinced that it could be done, he proceeded to operate on his patient, a young man aged 25, with localized tuberculous disease of the right apex. An incision was made in the second intercostal space; after incising and holding aside the great pectoral muscle, the parietal pleura was reached, and now commenced the difficult task of detaching it. The upper part was freed with ease, but below, in parts, it was torn and air was heard whistling; these flaws were stopped with iodoform gauze, and after the rest of the pleura was freed the finger was introduced and the summit of the lung explored. The finger was placed behind the apex and pushed forwards, the lung being at the same time seized with a pair of forceps specially constructed to seize friable tissue, and drawn out through a hole torn in the parietal pleura, which formed a collar round the protruded lung. There were no adhesions between the two layers of pleura, and the surface of the lung appeared healthy, but an induration the size of a large hazel-nut was felt in the portion of the lung withdrawn. A silk ligature was now thrown round the protruded lung beyond the forceps, and the portion of lung removed. The pedicle was fixed to the periosteum on the inner surface of the second rib and the various structures in the wound united by sutures, closing the wound completely and applying over all iodoform dressings. The dressings were not removed for six days, when union was found to be complete. The patient recovered rapidly, and when he was exhibited to the Surgical Society there was good resonance over the lung, and the patient was discharged cured. The portion of lung removed was examined by Prof. Cornil, and in it was found a tuberculous mass the size of a hazel-nut, without having any cavity in it. Around the margin were disseminated tubercles. The bacilli of tubercle were easily demonstrated.

Sodium Bisulphite in Tonsillitus and Coryza.—Excellent results are reported from the use of sodium bisulphite in aborting tonsillitis and coryza. Tablespoonful doses of a saturated solution may be given every hour or two for twenty-four hours, or even longer if necessary. The disease is usually controlled in twenty-four hours under this treatment.—*Notes on New Remedies.*

To Improve the Local Action of Tincture of Iodine.—Tincture of iodine mixed with glycerine, is claimed by Dr. Hammond to prove more effective as a local application than the plain tincture. This is due to the retardation of the dissipation of the iodine, or, more likely, to the skin remaining soft and hence in a better condition for absorbing the drug. —*Lancet-Clinic.*

Salicylate of Soda in Orchitis (Dr. Pigornet).—In gonorrhœal orchitis salicylate of soda causes in a few hours at first diminution, and finally complete cessation of pain. Its action is especially constant in acute cases of epididymitis with *vaginalite*. When inflammation of the cord predominates the medication is often without effect. In cases thus treated revolution of the swelling begins sooner than in cases treated antiphlogistically. It follows a regular course, and it may be completed in less than eight to ten days, leaving only slight induration of the epididymis.—*Bulletin General de Therap.*

Dr. Ohmann-Dumesnil has assumed editorial charge of *The Weekly Medical Review*. The initial numbers under his direction are excellent ones.

The Possibility of Hastening Successfully the Crisis in Pneumonia.—Undoubtedly, with our present methods of handling disease, many of the ordinary illnesses which make up the large part of the routine work of every practicing physician are treated in as thoroughly a scientific and successful manner as they ever will be. If advancement is to be made, it must be done through radically different channels. Bacteriology seems to be at present the great field through which general medicine is to receive its impetus for the future.

In this connection it is encouraging to note the increased report of inoculation experiments with the toxine and antitoxine of the various pathogenic germs found in different diseases. The use of the ptomaines of the hog cholera bacillus received notice, editorially, a year ago. Since then there have been many other reports, notably on the establishment of immunity from tetanus and diphtheria from inoculations with the chemical products of their bacilli.

One of the latest contributions to this subject is concerned with the possibility of conferring immunity against pneumonia in man by the injection of the products of the pneumococcus. G. and F. Klemperer (*Berliner klinische Wochenschrift*, August 24 and 31, 1891) have been guided in their experiments by the knowledge that, in most instances, pneumonia, after a course lasting from five to seven days, terminates abruptly by crisis. In the course of a few hours the patient becomes remarkably better; the temperature comes down and the pulse becomes slower and firmer. Yet there has been, during the occurrence of this phenomenon, practically no change in the condition of the lungs, which still remained filled with fibrinous exudation. Pneumococci are still found after the crisis in great numbers in the sputa, and still retain all their virulence.

It seems, therefore, to these observers that the crisis in pneumonia does not depend on any change in the condition of the lungs or in the microörganisms which are found in the disease, but that the improvement is due to the fact that the products of the pneumococcus modify their virulence in some manner after a certain period.

These German pathologists claim that the pneumococcus, when introduced into the body of an animal, gives rise to a *pneumotoxine* which can be isolated. This pneumotoxine is able to produce a febrile reaction lasting several days, after which another substance, *antipneumotoxine*, is produced, which has the power of neutralizing pneumotoxine.

The manner in which immunity is conferred is explained by these observers in this way: Antipneumotoxine, which is found after the crisis in patients suffering from pneumonic infection, has the power of neutralizing the active poison of the disease, and allows nature to re-assert herself.

These observers have tried the injection of antipneumotoxine in a few patients suffering from pneumonia. The antipneumotoxine which they use for this purpose, they obtain from the blood-serum of animals in the stage of pneumonic crisis. They found that in all these patients a hypodermic injection of four to six cubic centimeters of serum was followed, in from six to twelve hours, by a considerable fall in the temperature, with slowing of the pulse and respiration.

Of course, further investigation of these conclusions, especially in the hands of other observers, is necessary before deciding on their practical value.—*Univ. Med. Mag.*

Chromic Acid in the Treatment of Cysts.—Within the last few months I have treated with chromic acid three cases of ranula and seven of cystic goitre with such satisfactory results that I venture to make them known. The three cases of ranula occurred in two males and one female; the former had received previous treatment without any benefit; the latter had not sought advice before. All three had large cysts, and the mode of treatment followed was the same in each. A portion of the cyst was cut away and the contents washed out. A saturated solution of chromic acid was then freely applied with a chromic acid carrier to several points of the cyst wall. At the end of the week, the cavity having much diminished, the acid was again applied, and in from a fortnight to three weeks the wound had healed and all signs of the tumor had disappeared. There were no bad symptoms. The seven cases of cystic goitre were in females. The tumors were tapped in the usual manner and the contents washed out. After all hæmorrhage had ceased, the saturated chromic acid solution was applied with a carrier though the canula to the walls of the cyst, in the same manner as with the ranulas. Six of the seven cases healed rapidly after from two to three applications, but the second and seventh of the series resisted for a long time all attempts, and it was not until three months had passed and some half-a-dozen applications had been made that the tumor disappeared. But neither in this nor in any of the other cases was there a bad symptom, and I attribute the length of time the last mentioned case took to heal to the fact that there was a considerable amount of hæmorrhagic oozing, which to a certain extent neutralized the action of the acid. It is therefore advisable to see that hæmorrhage is, as much as possible, arrested before applying the acid. I cannot too strongly recommend this mode of treatment (first suggested by Dr. Woakes in the *Lancet* about two years ago), and though the evidence I have been able to offer is not very great—ten cases in all—still the persistent favorable results obtained are, I think, strongly in favor of a good trial being given to it, not only in the same class of cases as those I have quoted, but in every case of cyst that is inadvisable or impossible to remove. In cystic goitres it seems entirely to do away with the most dangerous part of the ordinary treatment—viz., the conversion of the cyst into a large abscess.—W. R. H. Stewart, F.R.S.C., Edin., etc., in *Lancet.*

Arsenite of Copper for La Grippe.—In the influenza epidemic of the past winter and early spring, of course I had my share of cases to treat. It presented itself to me as to other physicians, in all its protean forms, yet I was always careful to ascertain in each case I treated whether the malady was confined in its most marked form to the nervous system, alimentary canal, or to the respiratory organs. In all cases in which the most prominent symptoms were of a nervous character, attended with severe headache, and also those in which the alimentary canal was most implicated, I found no medicine to act so promptly and well, and to which the entire system seemed so responsive, as the arsenite of copper.

Furred tongue and constipated bowels were readily relieved by giving calomel tablets, of one-fourth grain each, two or three times a day, giving two tablets at a time. In this way all cases of influenza, where the nervous system and alimentary canal were attacked, I treated with comfort to my patients and gratification to myself. I kept my patients strictly confined to bed, allowing them to have the diet the appetite would take. The most agreeable article of diet I found to be a fresh egg whipped up in a teacup and the cup then filled with tea. This can be sweetened or not, as the patient desires, and with a bit of toast is generally as much as will be taken. This can be repeated three times a day with good effect.—J. B. Johnson, M. D., in *Western Med. Rep.*

The Area and Population of the Globe.—The recent publication of the *Bevölkerung der Erde*, of Drs. Wagner and Supan, by Perthes, of Gotha, gives us the most reliable information as to the area and population of the earth now obtainable. The estimate for the total population of the earth in this present year is 1,480 millions, or an increase of 46 millions over the estimate for 1882, when the last edition of these statistics was published. The exact enumeration of 836 millions (about 56 per cent. of the whole population of the globe) has now been accomplished by census or registration. The population of the chief divisions of the globe is, in round numbers: in Europe, 357 millions, giving 94 inhabitants to each square mile; Africa, 163 millions, or 14 to the mile; America, 121 millions, or 8 to the mile; Australia, 3 millions, or 1 to the mile; and in the Oceanic Islands, 7 millions, or 10 to the mile. In Europe, Belgium exceeds all other countries in density of population, with 530 persons to a square mile; next follows Holland, with 365; and the United Kingdom, with 312; but whereas in England the density is 480, in Scotland it is only about one-fourth, and in Ireland about one-third that of England. In Norway and Finland, the most thinly populated countries of Europe, there are only about 16 persons to the square mile. Of China the estimate is 361 millions, giving a density of about 77 to the square mile. It is in respect of Africa that the greatest doubt necessarily exists. These statistics make it manifest that there are still vast areas of the habitable surface of the earth almost, if not quite, unpeopled; and which will for many a long year to come receive the surplus millions of Europe and other parts of the globe in which the density of population is most keenly felt.

Dr. Leartus Connor has sent out a reprint of his article, "Other Methods of Promoting the Development of the Sections," read before the Section of Ophthalmology at the forty-second meeting of the American Medical Association. He calls attention to the phenomenal growth of the Section and the fact that some new arrangement of hours must be made in order that the papers presented must be read and discussed as their merits demand. He advocates shortening the general sessions and referring all matters possible to committees. He believes each Section should reprint its proceedings in a volume after they have appeared in the Journal. He suggests that a *council of the Section* be formed, consisting of three men from each Section, and that these shall control the appointment of the trustees, who manage the Journal, and the nominating committee.

Dr. Connor has the welfare of the Association as well as of his Section at heart and is endeavoring to make that body what it should be, the representative of all that is best in the medical profession of America. His words are words of wisdom, and if his suggestions are accepted and incorporated into the laws governing the Association, it will improve more satisfactorily, and the Journal, which is only a reflex of the body controlling it, will rise higher in the list of valuable publications.—*Western Med. Rep.*

Convulsions Treated by Compression of the Carotid.—Dr. Leopold Roheim, of Budapest, publishes in the *Gyogyaszat* a case of eclampsia which he had, after the failure of all ordinary remedies, successfully treated by compression of the carotid. The case, which is quoted by the *Pester Medicinisch-Chirurgische Presse*, was that of a robust man of fifty-six, who had been suffering for years from cancer of the bladder, with occasional hæmaturia. The man had been attacked by a most violent eclamptic paroxysm, which was mainly confined to the left side. Dr. Roheim prescribed in vain musk, valerianate of zinc, bromide of potassium, assafœtida, hypodermic injections of morphia, enemata of hydrate of chloral, and frictions with mustard, and at last employed compression of the carotid. After constant compression for some time of the right carotid the convulsions were suddenly arrested, the patient recovered normal respiration, and very soon felt quite well. Two or three slighter attacks followed, which were soon arrested by properly instructed attendants. The effect of the compression was so remarkable that Dr. Roheim earnestly recommends this treatment. He compressed the carotid with the index and second finger between the larynx and sterno cleido-mastoid muscle backward toward the spine, just as Trousseau and Blaud had recommended. He was equally successful in the case of a girl nine years old. He considers the *rationale* of the treatment to be that by compressing the carotid and at the same time necessarily the sympathetic nerve fibres, which closely follow the course of the artery, the excitability of the brain is allayed.—*Canadian Practitioner.*

Hysteria in the Nursery.—The Paris correspondent of *The Lancet*, December 12, 1891, states that Dr. Chaumier, of Tours, recently read a paper before the Académie de Médecine on "Hysteria in Infants." Notes of two hundred cases, observed in children under two years of age, led the worthy Frenchman to believe that what ignorant mothers, nurses, and doctors have considered convulsions, "tantrums," or fits of bad temper, are in reality more or less severe attacks of hysteria. According to Dr. Chaumier, the symptoms of the mildest attack of infantile hysteria are repeated, and causeless accesses of rage manifested by loud cries. More serious attacks may be recognized by a stiffening of the limbs, with turgidity of the face, and possibly tremblings. Some hysterical babies will roll on the floor, or the bed, executing extensive movements of the arms or legs, without losing consciousness. Others lose consciousness, and the body is either rigid or limp. There are also *grandes attaques* even among babies. The prognosis is good, and what may be denominated "cradle hysteria" is more amenable to treatment than the drawing-room variety.—*Medical Record.*

The Physiology of Tears.—No subject has yielded more poetry than that of tears. Adjectives the most various have been used to express the qualities of tears. They have been called "hot," "cold," "languid," "briny," "gushing," "round," "glittering," "dull," "silent," "wearied," "wanton," and I know not what else. They are waves of emotion, and as a general expression they are said to spring always from the heart—an expression singularly truthful for no one ever wept from the head; that is to say, no one ever reasoned himself or herself into tears, except through an appeal back to an emotion. There are very few persons who do not under some emotions shed tears, and it is probably quite true that they who can always restrain them are, according to the common opinion, of a hard and unimpressionable nature. The statement often made, that insane persons do not shed tears, is not all true, but there is some truth in it. I have seen the insane weeping, but I must admit that on visiting the wards of great asylums, there is a remarkable absence of weeping in comparison with the noise, irritation, and wandering of intellect that is forced on the attention. Also, I have known a sane person who became insane, owing to a great calamity of grief, overwhelmed with weeping while the sanity remained, but perfectly and persistently tearless when the insanity was manifested; a result that may appear natural when the physiology of weeping is properly understood.

The poets have dealt with what may be considered, from their point of view, the chemistry of tears. They have written about "salt tears," "crystal tears," "poisonous tears," "honeyed tears," and the like. They are to some extent correct in their poetic guesses. Tears are saline, for they carry a trace of the chloride of sodium or common salt which exists in the blood; they may be poisonous, for in persons under the influence of a soluble poison, like a salt of antimony, they may convey an infinitesimal part of such poisonous material; they may be honeyed, for in diabetes the tears do sometimes become saccharine, like the other fluid secretions. But this sort of thing is exceptional. In a general way, tears are made up of pure water holding a trace of saline matter, and nothing more; the glands which secrete them are the purest wells of pure water in the body.

Tears are the result of a nervous storm in the central nervous system, under which there is such a change in the vascular terminals of the tear-secreting glands that excretion of water from the glands is profuse. Some excretion is always in process, in order that the surface of the eye may be laved, and cleared of foreign matters which may come in contact with it; but the controlling centre is at a distance. As the muscular power that extends or flexes a finger is at a distance from the part moved, so the excitement to tears is from an irritation in a distant nervous centre, and is removed when the nervous centre is either soothed or exhausted. The persons who weep say that tears afford relief. Nothing is more perfectly true, nothing more clear when the facts are understood. The relief comes, not from the mere escape of tears, which is only a symptom, but from the cessation of the storm in the nervous chain. If the storm be calmed by soothing measures, as when we soothe a child that is weeping from fear, annoyance or injury, we quiet the nervous centres, upon which the effect ceases. In children, the soothing method succeeds, and sometimes it succeeds in adults, although in adults the cessation of tears is more commonly due to actual exhaustion following a period of nervous activity. In grief, the afflicted weep until they can weep no more; then they become calm, or, like children, cry themselves to sleep. Thus tears indicate relief, and that the nervous system has fallen into the repose of weariness. Persons subjected to many and repeated griefs shed in time fewer tears, and the aged, compared with the younger, are almost tearless. The poor insane patient who ceases to weep becomes griefless; under the continued excitement the grief centre fails or dies. If this were not the case, tears would flow in such a person as long as life lasted. Tears have their value in the life of mankind; they are of value not as tears, although their actual flow gives relief, but as signs that the grief centres are being relieved of their sensibility, and that the nervous organization is being fitted to bear up against sorrow.

I crossed the Thames in a boat at Putney with a man eighty-four years of age. He told me, "It is sixty years since I last made this passage in this same place, and then it was to fetch the famous Dr. Hooper" (author of Hooper's Physician's Vade Mecum) "to see my child Tom, lying at death's door with scarlet fever. I was so heart-broken, and cried so terribly, that the men in the ferry-boat, which then plied here, tried to console me. Tom recovered and lived until last year, when he went before me. If he had died of the scarlet fever when he was young, I veritably believe I should have died too of tears and grief; and yet when he died, fifty-nine years later, during all which period he and I had been affectionately attached to each other, I could not shed a tear, nor could I again feel the poignancy of that early grief. I accuse myself of being without feeling, and yet I cannot help it. Can you doctors explain the reason?" We explain it as above, and we think the explanation as merciful in fact as it is clear in theory.

Respecting the nervous excitation which calls forth tears, I have noticed how little it is due to physical pain. It is called forth by fear, by anxiety, by affection, by grief, but not even by pain extending to agony. In the days preceding the use of anæsthetics I have seen patients who were undergoing surgical operations faint; I have heard them cry out and scream until they made the bystanders sick and pale, but they rarely, if ever, shed tears. The parturient woman, in the acme of her "great pain and peril," may suffer the extremest physical agony, under which her cries are piercing, but she rarely sheds tears. Indeed, I never recollect seeing the most nervous of her class, under such circumstances, shedding a tear. Strangely, however, during the sleep induced by an anæsthetic like chloroform or ether, I have seen profuse tears, not from suffering, but from some emotional dream induced by the narcotic.

A very slight emotional disturbance will induce the nervous irritation leading to tears in susceptible subjects; and this although the catastrophe has nothing to do, intrinsically, with the person affected. Hence the commotion of tears conjured up in a play. Hamlet, it will be remembered, seizes aptly this point when the player weeps. "What's Hecuba to him, or he to Hecuba?" Of course nothing, yet the player weeps, and maybe the audience weeps with the player. By art another remembrance may be used to call forth tears on the proper occasion. A well-known player was asked how he managed to weep when he willed. He replied, "I call up the remembrance of my dear father, who is dead." On the other hand, anything that produces diversion of mind, when the disturbance is not severe, may keep back the outbreak. John Hunter tells us that once when he went to the play to see Mrs. Siddons perform, in a moving exposition of her great powers, he could not join the rest of the house in their tears, "because he had forgotten his pocket-handkerchief;" and a friend of my own, an emotional man, told me that at a funeral, where he expected to be overwhelmed with tears, he was completely checked by an absurd reading which the parish clerk gave to a sentence of the service. In these facts there is nothing incompatible, because the more intense the nervous vibrations, the more easy is the diversion of impulse from one centre to another.

As a rule, the escape, and free escape, of tears, relieves the heart, and saves the body from the shock of grief. Tears are the natural outlets of emotional tension. But there are exceptions to this rule, and I have more than once seen uncontrollable weeping followed by serious systemic disturbance, affecting principally the heart and circulation. I have known intermittency of the heart induced in this way, and assume the most serious character.

Change of scene, mental diversion and outdoor life, are the best remedies for the tearful, but an opiate, judiciously prescribed, is often the sovereign remedy. Other narcotics are injurious. Alcohol, so often resorted to, is fearfully injurious. It disturbs and unbalances the nervous system, keeps up a maudlin and pitiful sentimentality, and sustains the evil. Alcohol is the mother of sorrow. There are other narcotics which are similar in effect, notably chloral; but an opiate given at night-time, under necessity, *not only* soothes, but controls, and when prescribed so that the use of it shall not pass into habit, is a divine remedy.

It is one of the most curious of natural phenomena that mere imagination can excite the nervous system into the production of tears, without any external aid or reflex. The readers of a pathetic chapter of a fiction may weep over the pages without wonder, because the cause of tears has been raised before the mind; but is it not strange that the writer who made the fiction may be enforced to weep over it, and cannot, in fact, expect any one else to weep over it unless he is himself affected by the picture he has drawn? Such facts place mind, or the immaterial essence of humanity, over and above, and over and preceding, our material nature and all its functions. They lead us to the suspicion that we might exist, think and feel, without this mortal coil at all; or as if, at best, the mortal coil were nothing more than an instrument, doing the bidding of the *ego*, clumsily or refinedly, according to its form, and no more; as if there might be material forms of finer build; angelic forms, as the old books have it, amongst whom tears are unknown.

I have often wondered whether the lower animals shed tears as men and women and children do! It is in the order of physiology to suppose that every animal that secretes a fluid for the laving of the forepart of the eyeball might, under emotion, throw out an excess of secretion, and shed tears; and I have often heard sympathetic people and children say of animals they were fond of, that such animals wept on the loss of those to whom they were attached, on deprivation of some pleasure, or on receipt of punishment. This statement is made most frequently in regard to dogs, but I could never, in my own observation, arrive at evidence sufficient to confirm it. Animals cry, men weep, would be my interpretation of the argument, and well it is so, for if animals wept at the harsh treatment they are subjected to by nature, as well as man, there would soon be none to weep. That some of them have emotions and moments of sorrow, cannot be doubted; but they have no continued memory of the emotion, no recurring pictures that recall it. They forget even their offspring after the briefest periods, and they do not weep from physical pain. The picture of the tear in the eye of the hunted deer is pathetic, and by the reflex may make some weep. But the tear is the sweat of fatigue, not the sign of emotion.

As tears are secreted by glands which lie between their nervous centre and the mucous surface of the eyeball; as they have two functions or duties, one the function of relieving nervous tension, the other of laving the eyeball, so these functions may be called into overaction by internal nervous impulses or vibrations, and by external excitations, or what are sometimes called reflex actions. The first is seen in the act of weeping under emotion, the vibration starting in the nervous centres, and extending to the gland from behind, urging it to action; the second is seen in the act of shedding tears from direct irritation of the mucous surface of the eyeball, as when an irritating substance "gets into the eye," and the vibration extends from the mucous surface back to the gland, exciting it to action and causing emotionless tears. In these ways tears afford a good illustration of the mode in which the nervous fibres are capable of conveying to a secreting organ exciting impulses from both sides of a gland lying in their course, and having in connection with it afferent and efferent communications. In both cases the exciting impulse is a vibration; and as when the impulse sets forth from a mere external irritation, as from a particle of dust on the conjunctiva, the effect is in the truest sense mechanical, so, probably, in the case of the emotional irritation which calls forth tears, the process is as purely mechanical.

In the human animal, tears are most easily wrought where the sympathetic nervous system is most developed and most impressionable, and when the three great emotions, fear, grief and joy, are most active. Hence women generally are more given to tears than men, and under the peculiar state called hysteria, in which the nervous system is at highest tension, are often seen moved to tears by the three emotions in turn, during one paroxysm.

It has been a matter for discussion why tears are always being secreted, in health, for the lubrication and laving of the eyeball. That this constant process is active, is shown by the copious loss of tears over the cheek whenever the lachrymal duct, by which the secretion is naturally borne away from the conjunctival surface to the nasal cavity, and so to the throat, is closed up. But what keeps up the secretion? I suspect the small trace of saline substance that is present in the tears is the cause. The salt keeps up just a sufficient irritation to give an impulse back to the gland, a reflex, sufficient to sustain the necessary function. During sleep, when the eyes are closed, and there is little evaporation from the conjunctival surface, this irritation will be subdued, and tears will cease like other functions. So sleep cures tears, as it "knits up the ravelled sleeve of care."—*The Asclepiad.*

THE UNTOWARD EFFECTS OF SULPHONAL.—In the administration of sulphonal it is all important to administer the salt fully dissolved, otherwise, if given continuously, it may accumulate in the intestines in sufficient quantity to bring about symptoms of marked intoxication. This danger is intensified by the obstinate constipation which frequently attends the repetition of the agent. Sulphonal is best administered in three or four ounces of hot beef tea, care being taken that it is thoroughly dissolved. Renal inadequacy is a contra-indication to the employment of repeated doses, as elimination is prevented, and the danger of intoxication being in consequence increased. In addition to the blood changes referred to and constipation, sulphonal induces ataxia, with manifest weakness of the muscles of the extremities. Lowered temperature and slowness of breathing have also been observed. Visual and auditory hallucinations are uncommon effects. With care, we believe it is possible to avoid all these disagreeable effects, or, at any rate, such as are of gravity, by attention to the following directions: The maximum doses should not exceed twenty grains. It should be thoroughly dissolved. The drug should not be given continuously for more than a few days, and then only when purgatives are employed to counteract its astringent action. It should not be given continuously in cases of renal inadequacy.—*Montreal Medical Journal.*

A REMARKABLE case of maternal impression has lately turned up. It seems that a cow was quietly ruminating on the good dinner she had had, and thinking whether a supper would be equally as generous, when a deer ran suddenly into her lot, followed by a bear at his heels. There before her eyes the bear seized the deer and a short struggle ensued. The cow was in an "interesting condition." The awful sight riveted her to her tracks. Her fright was fearful to behold. Her eyes looked as large as "sacers"; her nostrils were distended; her tail assumed the horizontal position, and every muscle in her body twitched and jumped as though the current of an electric battery were coursing through them. The legs of the bear and deer were so mixed up in the struggle that the cow could not count them, or tell a hoof from a claw. She imagined that she saw a horn protruding from the forehead of the bear; and altogether the scene was very much mixed up in the mind of the cow. The offspring was a frightful monstrosity, an exact reproduction of the image formed on her mind by the mixed and confused scene. Let no one hereafter doubt the fact of maternal impressions.—*St. Joseph Medical Herald.*

SURGICAL TREATMENT OF PULMONARY CAVITIES.—At the recent Congress of Tuberculosis, M. Poirier (*La Semaine Médicale*) read a paper on the above subject. The first case recorded was the result of an accident. In a duel fought in 1679 the sword of one of the combatants passed through his antagonist's lung and opened a pulmonary cavity; the surgeon utilized the wound for the direct treatment of the cavity and the patient recovered. In conjunction with M. Jonnesco, M. Poirier has collected all the available statistics, of which the following is the summary: Of 29 cases of incision of tuberculous cavities with resection of ribs, improvement took place in 15, cure resulted in 4, and in 9 the result was negative. In 19 cases the disease was situated in the apex. These authors conclude that the best way of reaching the upper part of the lung is by making an incision with a thermo-cautery 4 cm. below the sterno-costal notch, from the middle line of the sternum outwards for 9 cm. in a direction parallel to the first intercostal space. In this the pectoralis major, which is usually much thinned, is reached, and by enlarging one of the spaces between the fasciculi the plane of the intercostal muscles is reached; this is divided and the pleura exposed. If there are no adhesions, it is better to establish them before proceeding further; but if there is a cavity, adhesions are always present. It is easy to strike the cavity through the adhesions, though a certain thickness of pulmonary tissue has often to be traversed for the purpose. As cavities are generally situated quite in the upper part of the lung, the first intercostal space is at a distinctly lower level than the cavity; the point of the instrument is then carried from below upward and from before backward. When the cavity lies toward the back, the spinous process of the seventh cervical vertebra should be sought for; an incision is made outward from this point toward the scapula, the trapezius and rhomboideus are divided, and the first intercostal space, which is narrower behind, is reached. Resection of the rib may be necessary. M. Poirier does not appear to have operated himself on the living, his deductions having been made from operations on dead bodies.—Supplement of *British Medical Journal.*

Etherization in Croup.—By the means of intubation and tracheotomy, the mortality in croup has been very much lowered, but the necessary instruments and the ability to use them are not possessed by every general practitioner so that the discovery of any new method which offers a hope of assistance in tiding over the critical period in this disease is received with interest. Dr. Betz, in the *Centralblatt fur die gesammte Therapie*, reports a case of laryngeal croup in which the patient, a child thirteen months old, was in imminent danger of suffocation, and, the means not being at hand for surgical interference, etherization was resorted to with success. Three or four drops of a mixture of three parts of sulphuric ether and one part each of acetic ether and menthol were given by inhalation every half hour. For four hours the child was kept under light narcosis, and at the end of eight hours the improvement was so great that there was no necessity for an operation. The author has since treated successfully two other cases of a similar degree severity.—*New York Medical Journal.*

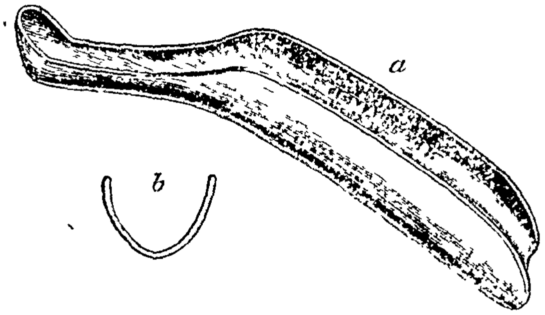
Primary Mumps of the Testicle.—Raven (*Lancet*) reports the case of a young man, exposed to the infection of mumps, who complained of pain and swelling in the left testicle. Four days later both parotids began to enlarge. Seven months previously he had had gonorrhœa, succeeded by gleet, followed by orchitis in both testes, but for three months previous to the mumps he had been well. The writer believes that the orchitis rendered the testicle vulnerable, and that the virus effected an easier lodgment there than in the parotid glands. The mildness of the inflammation in the testicles may bear out Trousseau's distinction between mumps and parotitis. Mumps he regarded as engorgement, but not inflammation of the gland.—*Medical Brief.*

Sterility of Fat People.—Dr. Kisch, in *Le. Bul. Med.*, says: Obesity is an obstacle to fecundation in all animals; and this law obtains also in the vegetable kingdom. Hippocrates enrolled this among his aphorisms. As proof, he cited the frequent sterility of the Scythian women, often fat, in comparison with the remarkable fecundity of their slaves, who were wont to become pregnant upon the least provocation. Without seeking for demonstrative instances in Eastern countries, he has ascertained that while sterility exists on an average in one household in ten, or at least in more than one in eight—six among the aristocracy—this proportion is increased to one in five when the wife or both parties are fat; if we reckon families which have only one child, in such cases there will be found a proportion of one to four.—*Medical Brief.*

A NEW INSTRUMENT.

BY DR. GEORGE HENDERSON.

A device to be used in the treatment after the operation of ruptured or lacerated perineum as a conductor of the urine from the meatus of the urethra to the bed pan; thus aiding the rapid repair of the parts and relieving the patient of that excruciating pain suffered while passing urine over the lacerated surface. In introducing the instrument it will be held at about forty-five degrees above right angle to the body and pushed into the vagina until the protuberance on the small end passes by the pupic arch, then let the instrument fall between the labia and it is in position. It can be introduced by the patient or the most inexperienced nurse.



Washington, D. C.

BOOK REVIEWS.

A Treatise on Gynecology, Medical and Surgical. By L. Pozzi, M.D., Professeur agrégé à la Faculté de Medécine, Paris. Vol. 1. Translated by Brooks H. Wells, M.D.

English reading physicians are to be congratulated upon the opportunity of securing so excellent a translation of the classical treatise of Pozzi as has been given us by Dr. Wells. Not only is the original matter most valuable, but the additions made by the editor by no means detract from the value of the book. A book of this kind is sure to be appreciated by those who are striving to keep abreast of modern aseptic gynecology. It is comforting to observe with what care the author and editor present modern aseptic and antiseptic methods and operative technique. The work is superbly illustrated, and is one of the best made books that Wm. Wood & Co. have ever published.

Deafness and Discharge from the Ear. The modern treatment for the radical cure of deafness, otorrhœa, noises in the head, vertigo and distress in the ear. By Samuel Sexton, M.D., assisted by Alex. Duane, M.D. I. H. Vail & Co. Pp. 89.

In this small work Dr. Sexton again advances his claim for the efficiency of the operation of removal of the malleus or the malleus and incus together in the treatment of those obstinate conditions, chronic non-suppurative and chronic suppurative inflammation of the middle ear.

He supports his claim by numerous instances of partial and complete success that his own experience has afforded him, although it must be stated that in many of them the report of the condition of the parts before operation is not as complete as could be desired.

If this operation of removal of the ossicles will keep the drum membrane perforate in chronic non-suppurative inflammation of the middle ear, it should be more widely known.

Lesson in the Diagnosis and Treatment of Eye Diseases. By Casey A. Wood, M.D. Geo. T. Davis, Detroit, Mich. Pp. 146.

The above is the title of a neat little volume designed for students and general practitioners. The need for such a work does not seem to be very pressing, in view of the fact that so many excellent treatises, in a compact form, on the subjects here considered, already exist.

There is certainly no justification for the omission in a work that purports to be a manual of diseases of the eye, of such important subjects as "conjunctival diseases" and the "determination of the necessity for wearing glasses." If the importance of constant repetition as a means of making deep and lasting mental impressions, be a sufficient excuse for the frequent exhibition of the same old truths in a slight change of dress, surely these subjects should not be neglected.

The handy form of the volume may make it attractive to the busy practitioner, but the student will probably desire a more complete account of the subject.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by CHARLES J. SAJOUS, M.D. Five vols. F. A. Davis, publisher, Philadelphia, New York, Chicago, Atlanta, and London. 1891.

This annual, so well known to the profession, is better than ever this year. The editors seem to have appreciated more fully than heretofore their duties, and the result is a magnificent production. We fail to appreciate the opposition which this work has received at the hands of the publishers of certain medical journals. It does a work which no medical journal can possibly do, and supplies the medical world with the résumé of practically all that is valuable, that has appeared during the preceding year. It does not usurp the place of the weekly medical journal, but rather makes this visitor the more welcome. We believe its tendency will be to cause physicians to extend their reading to subscribe for more periodicals. It is deserving of the highest success, and any medical man who has once subscribed for it, will be very loth to discontinue his subscription.

A MANUAL OF GENERAL PATHOLOGY AND MORBID ANATOMY. By H. N. HALL, *Ph. G., M. D. Chicago*: *Rand, McNally & Co.*, Printers, 1891.

It is difficult to see what object the author had in view in preparing this little book. It is so condensed as to convey practically no information. A beginner could only get most confused ideas from it. Moreover, it is not free from misleading statements. Aphthous and croupous stomatitis are made synonymous, as are ulcerative and diphtheritic stomatitis. Such errors are palpable and serious. Under the title, "Acute Tonsillitis," occurs this statement: "Phlegmonous pharyngitis, an acute parenchymatous inflammation of either one or both tonsils, usually terminating in suppuration, in which the mucous membranes are hyperæmic, the glands swollen, and oftentimes the follicles become enlarged and of a whitish appearance, which might lead a careless diagnostician toward the belief that the condition might be diphtheria." This extract gives a good idea of the style of the writing. Of Addison's disease is said: "There is no great change in the blood, but may be a diminution in the number of red corpuscles and amount of fibrin. Prognosis is bad; usually affects young men, whom it kills in one or two years."

MISCELLANY.

BURNING OF THE INDIANAPOLIS SURGICAL INSTITUTE.—Speaking of this terrible disaster, *The Sentinel* of that city says: "For years it had been expected and predicted, and the horrors of it drawn in word pictures practically just as it occurred. It was rightly considered inevitable. It was known by all to be a mere matter of time till it occurred, until the people would be shocked by the knowledge that the long-expected and long-dreaded had happened, sickened with the details of its horror and stunned with the terrible harvest death reaped by it." Such facts add to the horror. That the city authorities should know of and wink at such a crime is appalling. "*The Sentinel* bows its head in shame that it has not raised its voice long ago against this standing menace to human life." As such disasters usually come in duplicate and triplicate the lesson is clear. Let the authorities of all cities be on the alert. Imperfections of the kind about buildings where the sick and helpless are gathered are wholly inexcusable, and the authorities permitting them and those owning them should be held responsible.

Unquestionably the Surgical Institute should have been closed long ago because of its unsuitableness for the purpose to which it was put.

Every hospital and charitable institution should be under the immediate surveilance of State and local boards of health and health boards should have the official power to close up any such institution that does not comply with the directions given for the safety and protection of the lives of the inmates.

AT THE stated meeting of the Medical Society of the County of New York, on Monday, Jan. 25th, 1892, the subject for discussion was the epidemic of influenza.

The discussion was opened by Dr. Janeway, and after addresses by Drs. Jackson, Draper and Robinson, Dr. Francis Delafield addressed the Society on the treatment of influenza. He stated as follows: The treatment consisted of putting the patient to bed and seeing that he was well nursed, and had proper diet while the disease was running its course. It was possible, however, for the physician to interfere with advantage in the case of certain complications. Of all the remedies suggested for the treatment of influenza and its complications, such as severe headache or neuralgia pains, etc., he had found nothing so reliable as phenacetine in doses of five grains every two hours. The catarrhal throat trouble which is often present he had treated successfully with aconite or salycilate of soda, with a solution of cocaine for local applications.—*Medical Record.*

MEDICAL SOCIETY OF THE MISSOURI VALLEY.—The next meeting of the Medical Society of Missouri Valley will be held in the city of Leavenworth, Kansas, March 17 and 18, 1892.

Physicians contributing papers or reporting cases for that meeting are urged to promptly send their title to the Secretary before March 1, so they can appear on the printed programme mailed at that date. A most enjoyable and profitable meeting is promised.

Physicians making application for membership will address Dr. R. M. Stone, Omaha, Neb., Chairman Committee on Credentials, enclosing a fee of $2.00.

Anything with reference to hotel or other accommodations at Leavenworth, address Dr. W. J. Van Eman, Chairman Committee of Arrangements.

F. S. THOMAS,
Secretary.

Council Bluffs, Ia., Feb. 1, 1892.

DR. WM. T. BAYNES died at his residence, 2419 Sixth Ave., Troy, N. Y., on the 22d of January.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 23, 1892, to January 29, 1892.

Capt. Henry G. Burton, Asst. Surgeon U. S. A., having been found incapacitated for active service by an Army retiring board, is granted leave of absence until further orders, on account of disability.

Official List of Changes in the Medical Corps of the U. S Navy, for the Week Ending January 30, 1892.

P. A. Surgeon A. M. D. McCormick, detached from receiving ship "Minnesota," and to tha U. S. S. "Charleston."

Asst. Surgeon Geo. H. Barber, detached from the U. S. S. "Charleston," and to the receiving ship "Minnesota."

P. A. Surgeon A. G. Cabell, detached from the U. S. S. "Newark," and ordered to the U. S. S. "Kearsarge."

Asst. Surgeon James Stoughton, detached from the Naval Hospital, Norfolk, Va., and to the training ship "Portsmouth."

Asst. Surgeon M. S. Guest, detached from the Navy Yard, Norfolk, Va., and to the Naval Hospital, Norfolk, Va.

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ORIGINAL ARTICLES.

CLINICAL REPORT OF CASES OPERATED UPON AT THE INDIANAPOLIS CITY HOSPITAL.

BY L. H. DUNNING, M.D.,
OF INDIANAPOLIS, IND.

The histories of the greater number of the cases included in this paper, were presented to the Marion County Medical Society at different times. A few of them excited such interest and comment, that the writer thought it might not be an unprofitable task for him to collect the histories and present them as a whole to the profession. While the number of cases is not large (but twenty-three in all), they present quite a variety of pathological conditions and of operative methods.

The results were uniformly good, except in two instances. In one case of procidentia, our efforts were a failure, and in one instance of vaginal hysterectomy, death followed in a few hours after the operation.

With few exceptions, the operations were done in the amphitheatre, in the presence of the students of the medical colleges of the city. The others were performed in the surgery of the hospital, in the presence of, and with the assistance of the house staff of physicians.

The instruments, ligatures, sponges and dressings were cared for by the nurses. After thoroughly washing the instruments, they were, just before each operation, boiled for one-half hour, and placed in sterilized water, or a 1 per cent. carbolic solution. The silk for ligatures and sutures was boiled before using, and laid in a separate dish containing a carbolic solution. The catgut was taken directly from the alcohol and juniper oil mixture, and the silkworm gut from a carbolic solution. Sponges were used in all the operations. Only the best bleached, aseptic sponges were bought from the instrument house. When brought to the hospital, these sponges were placed in jars containing a carbolic solution (1 to 60). When needed, they are taken from this solution, washed in sterilized water, and placed in the solution used during the operation. After operations, sponges used in cancer, syphilitic or septic cases, are destroyed.

The care of the sponges, after use in a simple case, is as follows: First, they are thrown into a solution of liquor potassa, and allowed to remain a few minutes, for the purpose of dissolving the blood clots. They are then thoroughly washed, and passed through a bichloride solution (1 to 2,000), and placed in the carbolic acid solution, there to remain until needed again. As dressings, we used iodoform and bichloride gauze, and plain absorbent cotton. The patients were prepared for every operation, however simple. Laxatives were given daily for two or three days prior to the operation, and the last day a purgative dose of salts was administered. Two or three thorough baths were given by the nurse, and if a plastic operation upon the perineum or vaginal walls, frequent douches of bichloride solution (1 to 10,000) were given.

Previous to abdominal sections, besides thoroughly cleansing the skin upon the abdomen, towels wrung out of a bichloride solution were laid over the abdomen for several hours. As a rule, ether was used as an anæsthetic.

Lacerations of the Cervix Uteri.—Of the many patients having this pathological condition, but four presented symptoms of sufficient gravity (in our judgment) to demand an operation. The symptoms were hyperæsthesia of the vagina and vulva, disorders of menstruation, persistent endometritis with erosions of the mucous membrane of the cervix, subinvolution of the uterus, and reflex symptoms which could not be attributed to other causes.

These four patients had had prolonged and ineffectual treatment for the cure of the erosion. The operation, in all cases, yielded satisfactory results, both in respect to immediate union and subsequent improvement in the general health of the patients.

In one instance, interrupted catgut sutures were used with entire success. In another case, silk was employed for sutures, and good union resulted. In two cases, silkworm gut was used.

In three cases, the perineum was closed at the same time, and the sutures were removed at the end of eighteen days. In both cases, union was perfect. In one case, there was an erosion and cystic degeneration about the os that had resisted local treatment. The dissection was carried around the os so as to remove all the eroded tissue. After the laceration had been closed by the sutures, a medium sized, soft rubber drainage tube was carried into the cervical canal through the internal os, and about 1½ inch of the tube left hanging down into the vagina. A silk thread was attached to the lower end of this tube and brought out at the ostium vagina, so that at the end of four days the tube was easily removed. On account of having done a perineorrhaphy at the same sitting, the cervical stitches were not removed until the end of two and one-half weeks, when union by first intention was found to have taken place, leaving a good patulous os, which two months later was found to be still of good size, every evidence of inflammation of the cervical tissue having disappeared. This method of dealing with intractable erosions accompanying lacerations of the cervix, the operator has found, in many other cases, to be entirely satisfactory.

Lacerated Perineum.—In six cases, operations were done for the relief of this condition. In two of them there was simply an incomplete laceration of the perineum with rectocele. In one of these cases, Tait's flap-splitting operation was done with excellent results. In the other, Schroeder's operation was done with equally as good results.

In two other cases, besides laceration of the perineum and rectocele, there was also laceration of the cervix. The double operation was done in both instances. In three the method described by Skene[1] was employed, and in each the result was the cure of the rectocele, and the formation of a good perineum.

In two other cases there were procidentia and prolapsus of the vaginal walls, which presented so many points of interest, that I am constrained to give the treatment in detail.

Mrs. B., aged 45 years, had complete prolapsus of the uterus. The anterior and posterior vaginal walls were also prolapsed. The bladder was dragged down, and spread over the anterior surface of the uterus so that, when partially filled, a pouch containing urine protruded from the vagina.

The rectal pouch was so much distended and dilated that, when the patient lay upon her side, and a finger was introduced into the rectum, it could be passed upward, then forwards into a dilated portion of the rectum, which protruded out of the vagina behind the uterus. As usual in such cases, there was hyperplasia of the uterus. Pessaries had been used in vain.

The cervix was amputated in the usual manner. The vaginal mucous membrane was separated from the cervix by an incision all around it, and pushed *upwards as in high amputation. The cervix was then* amputated near the internal os, and a modified Hegar's method employed in covering the stump. Upon removing the sutures at the end of eight days, it was found that union had taken place by first intention. A few days after, Hegar's operation upon the posterior vaginal wall was done. By these combined methods, we were enabled to cure the procidentia, the patient leaving the hospital at the end of seven weeks.

In the remaining case, the patient had already submitted to several operations, one upon the cervix and two upon the vaginal walls. There was procidentia, but not to so marked a degree as in the former case. When the uterus was pushed back into the vagina, it was observed that the vaginal tube had been shortened by the previous operations. As the organ was not greatly hypertrophied, it was thought best to shorten the round ligaments by Alexander's operation, which was done. Some difficulty was experienced in finding the ligament upon one side. When found, it was discovered to be small and fragile, but was successfully drawn out 1½ inch and stitched into the tissues about the pubes. The wound healed without suppuration, and the patient kept in bed four weeks. When she first arose from the bed, our work seemed very nearly a success, but in two weeks the uterus had descended so that, when she was on her feet for a time, the cervix protruded at the osteum vagina, demonstrating that our efforts thus far were unsuccessful. Hegar's operation was then done upon the posterior vaginal wall, good union resulting. While this did not cure the procidentia, the patient was able to get about with a moderate degree of comfort when she wore in the vagina a Peaslee's elastic ring pessary.

This case, when viewed side by side with the former one, is very instructive. Why were our efforts successful in one case and not in the other? Simply because we had different pathological conditions present. In the preceding case, the prolapsus was due to a prolapsus of the vaginal tube. The active force was from below. When the cervix had reached the osteum vagina, the [illegible] weight of the uterus favored the dilatation of the vaginal outlet and further displacement of the organ. This unfavorable shape, and a part of the weight of the uterus, were made to disappear by the removal of the lower segment of the organ. The operation upon the posterior vaginal wall prevented a future prolapsus of that tube.

In the last case the prolapsus of the uterus was due to pressure exerted from above combined with insufficiency of the uterine supports. The staying, supporting powers of the broad and utero-sacral ligaments were incompetent, and the supporting power of the cellular tissue about the cervix had been overcome.

We were unable to obtain the early history of the case, but I am convinced the displacement was caused in the first instance by a heavy lift, a strain, or a fall. Either the round ligaments did not adhere to the tissues to which they were sutured, or else were not strong enough to sustain the weight of the uterus.

Should this patient return to my clinic saying she is unable to work, and is suffering much pain or distress, I shall consider the question of removing the uterus through the vagina.

Neoplasms of the External Genital Organs.—These occurred in a colored woman 28 years old, with a history of syphilis. Of the numerous neoplasms, the largest one invaded the clitoris and the upper portion of the labia. It was pedunculated, the peduncle being about 1½ to 2½ inches at the attachment, smaller, however, between the attachments and the bulk of the neoplasm. The latter was lobular in form and as large as an orange, upon the surface of which were several small superficial ulcers, emitting a very foul odor. Scattered over the labia and perineum were many smaller neoplasms of various sizes and shapes. The operation of removing the largest was a bloody one. The whole mass was quickly excised, the numerous bleeding points ligated with catgut, and the surfaces of the wound immediately brought together with deep sutures. By this means the hæmorrhage was arrested.

When the wound was cleansed the configuration of the external organs was found to be considerably changed. The clitoris and upper portion of the labia had disappeared, and an integumentary arch overhung the meatus, while below, the free margins of the labia overlapped each other. We feared the act of micturation would be interfered with, but such did not prove to be the case. The smaller neoplasms were dealt with in a similar manner to the larger ones. The patient recovered so as to be around the ward in two weeks.

Of the tumor, Dr. A. W. Brayton says: "The neoplasms agree microscopically with the gross clinical characters and history. The group pass from simple hyperplasias of connective tissues and epithelium into caruncles and papillary growths, culminating in the fully developed lobulated, and tuberculated, orange-sized growths, on the clitoris and labia. The latter had become a large fibro-cellular mass suggesting a diffuse fibroma.

The case is a duplicate of Fig. 16, of Dr. R. W. Taylor's series in *New York Medical Journal* of Jan. 4, 1890, on 'chronic inflammation, infiltration and ulceration of the external genitals of women.' The tumors in this case are the result of chronic syphilitic hypertrophy."

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[1] Skene, Diseases of Women, pp. 140 and 141.

Vesico-Vaginal Fistula.—Mrs. Z. gave the following history: As a result of severe attacks of gonorrhœa, a distressing and obstinate cystitis had developed. It had resisted all treatment for two years. What treatment had been employed we could not definitely learn. She stated that she had been treated by several physicians, had taken a great deal of medicine; had had the bladder washed out and medicines injected, yet had steadily grown worse. As a last resort a vesico-vaginal fistula had been established several months previously, which had relieved her to a slight extent, but not enough she thought to compensate for the annoyance and distress occasioned by the constant dribbling of urine. She earnestly desired to have the fistula closed. An examination showed some induration of the labia and other external organs. The vagina had a macerated appearance and was somewhat indurated, but there was no ulceration anywhere to be found, neither was there any active inflammation anywhere to be seen. The fistula was small and situated midway between the meatus and the os. No preliminary treatment was instituted except hot water douches, to which was added boracic acid (ʒij to oj).

The operation was a simple one; a strip of tissue one quarter inch in width, was removed from around the fistula. Six sutures of silkworm-gut were used, three deep, and three superficial. A Skene-Goodman catheter was left in the bladder, which was removed and cleansed every eight hours. A small rubber tube was fastened over the external end of the catheter which conveyed the urine to a small earthen dish in the bed. The bowels were moved the third day and every second day subsequently. Vaginal douches of boracic acid solution were given regularly twice a day. On removing the stitches on the tenth day perfect union had taken place.

The catheter was discarded and the patient allowed to void urine in the natural way. At first there was a frequent and irritating desire to micturate, but it gradually became less frequent. She left the hospital in two weeks after the stitches were removed. At that time she was able to retain her urine one hour, and sometimes, two hours. The urine contained no blood and but little mucus.

She did not complain of much pain. Unless she greatly overstated her sufferings before the fistula was formed, the drainage was beneficial. I have not been able to see the patient since she left the hospital, so do not know her present condition.

Two Cases of Amputation of the Mammary Gland.—Mrs. J., aged 35 years. Mother of one child, 5 years of age. About one year ago noticed a small tumor in the breast. When first noticed it was not larger than a hickory nut: was hard, tender and movable, but deap seated. It gradually grew and became nodular and painful. When first seen by the operator it was the size of a large orange, apparently involving nearly the whole gland. Irregular in outline, nodular and flattened upon the under surface, it was attached to the skin, but movable. The axillary border of the nipple was retracted, and two small areas of skin were attached to the upper surface of the tumor. The tumor was quite painful, and one axillary gland was found involved. I did not hesitate to pronounce it a case of carcinoma and advised extirpation of tumor and gland. The operation was done at city hospital Feb. 5th, 1891. The entire breast was removed. The line of excision was extended toward the axilla, where the enlarged glands were searched for. One only was found, which was as large as an almond. It was removed. A short drainage tube was inserted at each extremity of the incision. The wound was closed by deep silkworm-gut, and superficial catgut sutures, and dressed by dusting iodoform along the line of incision and covering this with a layer of iodoform gauze, then by an abundant supply of absorbent cotton and finally a rubber bandage of aseptic gauze. This dressing was removed the second day, the drainage tubes removed and the dressing reapplied. The dressings were not disturbed again until the eighth day, when they were taken off and the stitches removed. Union by first intention had taken place the whole length of the incision, except where the drainage tubes were inserted. Again the dressings were applied and allowed to remain one week when the wound was entirely well. Then only a thin layer of gauze held in place by a light bandage was applied.

The patient went to her home in a distant part of the State at the end of three weeks, and I have not since seen her.

Cystic Tumor of Mammary Gland.—Mrs. K., aged 28 years, well nourished, the mother of several children, the youngest of which was eighteen months of age. The tumor had been pronounced malignant and she came to the hospital to have it removed. An examination of the breast revealed a tumor about the size of a hen's egg, located in the substance of the gland, midway between the nipple and axillary border. It was deep-seated, rather hard, movable, and not nodulated. Pressure upon it caused a sanguinolent fluid to discharge from the nipple. So profuse was this discharge that the patient stated she was compelled to wear cloths over the nipple to protect her clothing from the discharges which occurred every day. The nipple was not extracted, nor was there swelling of the superficial veins. She suffered but little pain, and no impairment of general health. The tumor, which she thought due to an injury, had developed within six months.

I diagnosticated the tumor an adenoma, and removed it in Nov., 1890. A thick layer of adipose tissue overlay the gland. By an accident the tumor was cut into, when there was a gush of sero-sanguinolent fluid. Under the circumstances it was difficult to estimate the amount of this fluid, but there was not less than an ounce nor more than two ounces. The tissues about the cyst walls were so hard the operator thought he was dealing with an adenoma which had undergone partial cystic degeneration. He therefore decided to remove the whole gland, which was done. The wound was closed and dressed in the same manner as in the preceding case. There was slight suppuration in the lower angle of the wound; the temperature reached 101°F., the third day, then fell to normal and remained so until recovery was complete. She left the hospital in three weeks, well.

Dr. Brayton, who witnessed the operation and examined the specimen, makes the following statement: "In this case the microscopical examination confirms the clinical history. There was a well marked inflammatory wall surrounding the cyst, which probably arose from an injury. The tumor on excision and examination exhibited none of the character of adenoma, carcinoma, or fibroma. The tumor proved to be a benign lacteal cyst maintaining through the ducts its connection with the nipple."

Ventral Hernia.—Six months previously the patient had had the uterine appendages removed, by the writer, for chronic inflammation of the appendages with adhesion. Her recovery had been a speedy one. The union in the abdominal incision had been by first intention, except at the lower angle, where a finer cicatrix had formed. She left the hospital eight weeks after the operation, and went to work, leaving off the abdominal bandage. A few months later she came to me, complaining of pain and weakness in the lower part of the abdomen, where a hernia was found. She went to the hospital, and in due time was operated upon for radical cure of the hernia. It was small and easily reduced. Over the prominent point of the protrusion the scar tissue widened so that it was one-half inch across, and very thin. An incision was made through this and the tissues divided through to the hernial opening. This opening readily admitted the tip of the index finger. The edges of the ring were pared down to the peritoneum, which was not opened. Three rows of stitches were introduced, the first extending from the skin one-quarter inch from the line of the incision, and were passed through all the tissues to the bottom of the opening, but not including the peritoneum; they were then passed upward from the bottom of the wound through all the tissues, emerging through the skin at a point corresponding to the points of entrance. Of these there were three. The second row of stitches were of catgut, and included only the muscular and fascial tissue. The third and superficial row, four in number, included only the cutaneous and sub-cutaneous tissues. The catgut stitches were tied first, then the deep suture (silkworm-gut), and lastly the superficial ones. The sutures were removed on the ninth day, when perfect union was found to have taken place. The patient begged to leave her bed on the tenth day, but was not permitted to do so until the end of two weeks. She wore continually a firm, well-fitting abdominal bandage. Three months subsequent to the operation there was no evidence of the return of the hernia.

Pyosalpinx and Chronic Peritonitis.—Laparotomy and removal of tubes and ovaries; irrigation and drainage; recovery. Miss B. B., aged 24 years, was admitted to hospital during an attack of pneumonia. Two weeks later complained greatly of pelvic pains. On examination found an irregular mass upon either side of and posterior to the uterus. Pronounced these as distended tubes. A few weeks later, when she had sufficiently recovered from her acute sickness, the appendages were removed. Both tubes were found distended with pus and the ends occluded. The ovaries were found in a state of parenchymatous chronic inflammation. There was also chronic peritonitis, limited chiefly to the pelvis and lower part of abdomen. Irrigated thoroughly and drained. The patient made a quick recovery, both from the effects of the operation and from the chronic peritonitis. I saw her at the end of two months, when she was apparently well.

Ovarian Tumor.—Mrs. H., aged 49 years; widow one year; married at 40. Menopause was established at 47. She enjoyed fair health until within the last few months, but had noticed bloating of the abdomen for some months. She was taken suddenly sick eight weeks previous to my seeing her, and as this was followed by an attack of peritonitis, rupture of the cyst probably took place at that time. Operated Dec. 12, removing a 38-pound tumor. There was a large rent in the anterior wall of the cyst, while the lower abdominal cavity was filled with a colloid material. Many soft and extensive adhesions were found; *more extensive and firmer within the right* inguinal region. A large glass drainage tube was inserted and allowed to remain for twenty-four hours. Temperature reached its highest point, 101$\frac{1}{5}$°, and pulse 136, upon the third day. Upon the eighth day she seemed to be convalescent, but upon the twelfth day the temperature began gradually to rise, when it ranged from 99° to 100.6°. The tongue became dry and furred and the countenance anxious, but there was *no tympanitis. On the fifteenth* day the patient seemed very sick, and I became convinced that there was pus forming at some point, and upon searching found an accumulation in the pelvis, upon the right side. I could outline a distinct abscess with tense walls bulging toward the rectum, the lower portion of which could be outlined by vaginal examination. Distinct fluctuation was elicited by examination with one finger in the rectum and another in the vagina. A trocar with canula was thrust into the abscess through the vagina, an aspirator attached, and little more than a pint of thick pus drawn off. The cavity of the abscess was then washed out with a 1 per cent. solution of carbolic acid. At this time —8:30 A. M.—the pulse was 112 and the temperature 100°; at noon the temperature was 100$\frac{2}{5}$°, pulse 120; at 5 P. M., temperature 99°, pulse 103; at 9 P. M., temperature 98$\frac{2}{5}$°, pulse 96. From this time forward the temperature never went above 99°, though the pulse was several times as frequent as 120 per minute. The patient made a good recovery. A few days after the evacuation of the abscess there could be found upon digital examination no trace of indurated tissue in the pelvis.

High Amputation of Cervix Uteri for Epithelioma.—This patient was a young married woman, who four months previously had been delivered of a healthy child. There was an extensive laceration of the cervix. The epithelioma sprang from the cervical endometrium, involving the anterior lip of the cervix. A microscopical examination of the removed portion of the neoplasm pointed unmistakably to its malignancy. The cervix was removed at its junction with the body of the uterus. We experienced some little difficulty in arresting the hæmorrhage from the uterine artery upon one side, but otherwise the operation was quickly and easily executed. The mucous membrane of the vagina and the stump were stitched together so that the stump was nearly covered by the flaps. Union by first intention took place. For two months the patient was well, when she began having irregular sanguinous discharges and much pain, intermittent in character. A few weeks later an examination showed the stump apparently healthy, but the wall of the vagina extensively invaded. Ulcerative processes beginning in a line reaching from a distance of one-half inch in front of the os forward to near the meatus urinaris. This operation, though carefully done and all of the cancerous tissue thoroughly removed, gave but a two months' respite. Does another such case present itself in which there shall appear as great evidence of malignancy, I shall not stop short of the removal of the entire organ.

Large Fibroid Tumor of Uterus.—Mrs. W., aged 29 years; colored. She had noticed a tumor in the lower part of the abdomen for four or five years, which had gradually grown in size until it reached from low down in the pelvis to a point one inch above the umbilicus. The tumor had developed so low in the uterus that the cervix was very nearly obliterated. As no pedicle could be formed, permitting extra-peritoneal treatment, it was decided to remove the appendages from the uterus. An incision was made, extending from a point one inch above the umbilicus in the median line down within two inches of the pubes. The tumor was exposed and search made for the ovaries and tubes. These not being found, the incision was enlarged above and below, and the tumor lifted out of the abdominal cavity, when we were able to find the right ovary and tube. The uterine end of the latter was enveloped and altogether involved in a small fibroid which sprang from the uterus. This mass, together with tube and ovary, was removed after ligating the tissues, uniting them to the uterus with chain-stitch ligatures. The left ovary and tube could not be found. The bladder was adherent to the under surface of the abdominal wall, just above the pubes, and was accidentally cut through the serous and muscular coats. The length of the incision being about one and one-half inch. This incision was sutured with a continuous catgut. A careful toilet was made of the peritoneum, after which the tumor was returned to the abdominal cavity. Two gallons of hot sterilized water were poured into the cavity and allowed to run out. No drainage was employed. The patient made a speedy and uninterrupted recovery. On the 11th of May last I saw the patient and examined the tumor. I found it much smaller, probably about one-half the size it was when operated upon. She had menstruated but once since she left her bed, two and one-half months previous. She expresses herself as feeling strong and well.

Adenoid Cancer of the Uterus.—Vaginal hysterectomy. Death, of hæmorrhage, ten hours after the operation. Mrs. G. G., aged 27 years. Had been an invalid nine years. Confined to her bed most of the time.

Nine years ago she gave birth to her first child. Soon after this confinement her physician informed her she had a cancer of the neck of the womb. This he thought to destroy by the application of caustics.

One year ago she gave birth to a well-developed child, and had nursed until the day of her arrival at the hospital, Feb. 23, 1891.

I examined her the day of her arrival. She was much emaciated, scarcely able to sit up. She complained of a continual burning pain through the pelvic regions, and much irritation of the bladder. She had not menstruated since the birth of her last child. There was a slight, thin vaginal discharge, which irritated the external organs. A physical examination showed the vagina large and relaxed, the uterus movable, of normal size and in normal position. There was an absence of the vaginal portion of the cervix. The cervix could be felt in the center of the vaginal vault, and had an excavated feeling and appearance. Within the os could be seen a small, irregular pouting mass of a deep red hue, which bled upon touching it with the probe. A portion of it was removed and submitted to Dr. Hessler for microscopical examination. He reported two days later that he had found all the characteristics of adenoid cancer in the specimen.

The patient and her husband desiring it, the uterus was removed through the vagina. The operation was not difficult, requiring but forty minutes for its completion. Forceps were used, two to each broad ligament; two others were required to close bleeding points. There was but slight hæmorrhage during the operation, the vagina being dry where the tampon was placed.

The patient was put to bed in good condition and rallied well. Five hours after the operation, upon my return to see the patient, the house physician informed me he had just discovered the patient was bleeding. Upon examination there were found slight signs of hæmorrhage, and upon removing the cotton from around the forceps, the lower portion of the vagina could be seen filled with clots of blood. The patient showed signs of exhaustion, but the bleeding was still going on. Though I appreciated the danger from shock in opening the vagina and attempting to arrest the hæmorrhage, hasty preparations were made to do so.

The patient was brought across the bed, the cotton removed from around the forceps and the vagina tampon withdrawn. The forceps were pressed aside so that the way was clear to enter the vagina. The clots were removed by the finger, while two fingers of the left hand depressed the posterior vaginal wall, the blood was carefully mopped away with cotton probangs.

Fortunately the bleeding point was found. It was not in the broad ligament stump, but in the tissues severed from around the os. The tissues had pulled out from the end of the forceps, leaving the open end of the artery free. I saw I could not ligate this small vessel without removing the forceps. This I feared to do lest other points would be exposed and more bleeding follow.

The only thing to do was to cauterize with thermo-cautery, which was done. An iodoform tampon was introduced and the patient changed in bed and made as comfortable as possible. Our efforts, though not continuing over ten minutes, had added greatly to her exhausted condition. For a time she was almost pulseless. Under the influence of rest, stimulants, and external heat she partially rallied for a time, then gradually sank until her death at 2 A.M., ten hours after the operation. No hæmorrhage occurred after the cautery. Hæmorrhage is one of the chief causes of death resulting from a vaginal hysterectomy. The forceps giving the trouble was a large one with a short bit, and hung loosely when not stayed. I do not believe hæmorrhage occurs any more frequently from the use of the forceps than the ligature. I have used them several times since the above operation without secondary hæmorrhage, the patients all recovering, but have not used them without the following precautions: For clamping bleeding points in the tissues nearest the vaginal outlet only, small forceps are used and these are tied to the large clamps, which include the broad ligaments.

Cystic Tumor of Anterior Vaginal Walls.—The patient, Miss H., was a subject of valvular heart disease. The tumor was oblong about the size of a hulled butternut. The centre of the tumor was to the right of the median line, overlapping the urethra. It had been mistaken for a urethrocele, but from this it was easily differentiated. The tumor was elastic and fluctuating, and did not diminish by pressure. A sound introduced into the urethra found no pocket between the meatus and bladder. On the contrary it pursued a normal course and direction until the bladder was entered. On account of the acute sickness of the patient no attempts at radical cure were admissible. So we aspirated the tumor, drawing off one-half ounce of the colorless fluid. The patient died of the effects of paralysis and heart disease a few weeks later. At the time of her death the tumor was refilling.

Hypertrophy and Elongation of the Infra-Vaginal Cervix.—Amputation with knife and scissors. Mrs. P. P. was aged forty years; had never borne children. Stated she had had "falling of womb" for fifteen years, and that it had been gradually becoming worse, until the womb protruded so far as to make walking painful. In other respects the patient appeared well, fully nourished, and able to do the housework for a large family.

Upon examination the os was found protruding from the ostium vagina about one inch. The examining finger was easily introduced into the vagina both before and behind the cervix. The cul-de-sac was normal, there was no prolapsus of the bladder, and but little if any descent of the body of the uterus. It was clearly a case of infra-vaginal elongation of the cervix uteri with hypertrophy.

The sound passed into the uterine canal five inches. The protrusion of the cervix was greater during menstruation. Menstruation, though profuse, was never painful. The patient was placed upon the side and a Sims' speculum introduced. The cervix was amputated with knife and scissors. Excessive hæmorrhage was prevented by an elastic ligature tied around the cervix at the vaginal junction, while the cervix was severed just below the ligature.

The sutures were placed after Hegar's[1] methods, the parts irrigated with a hot bichloride solution (1:1000), and a vaginal tampon of iodoform gauze left in the vagina. There was but little loss of blood. The patient reacted well, and made a comfortable and easy recovery.

On the ninth day the sutures were removed, when perfect union was found to have taken place. The amputated portion of the cervix was three inches long, and one and three quarters inches in diameter. I have examined this patient several times since the operation. The lower end of the stump is three inches above the ostium vagina, and the symptoms of prolapsus have entirely disappeared.

Recto-Vaginal Fistula.—B. A., colored; aged 50 years.

Patient much emaciated, had suffered from syphilis for several years. Complained of weakness, and stated that "passages from bowels come from wrong opening."

A physical examination showed syphilitic ulcerations about the external genitals, and a large recto-vaginal fistula. Two or three fingers could be readily passed from the rectum through the fistulous opening into the vagina. The patient stated that there had been soreness in that region for a year and that during the last six months she had noticed the fecal passages coming through the vagina. The tissues about the opening were ulcerated, and beyond the ulceration there was much induration. For obvious reasons the idea of a plastic operation could not be entertained. The parts were thoroughly cleansed and the ulcerated surfaces touched with carbolic acid and dusted with iodoform. A copious rectal injection of hot water was ordered once a day, and a bichloride (1:10000) vaginal injection twice a day. Every third day the ulcerated parts were to be touched with carbolic acid and dusted with iodoform. She was ordered to take internally large doses of iodide potassium, and moderate doses of deodized iron, while a liberal diet was directed. This treatment was followed for two months, by which time the fistulous opening had become so small as to scarcely admit the point of a uterine sound. The healing was by granulation, and was gradual. Twice during the time she was under treatment she had quite profuse hæmorrhages from the vaginal ulcerated surfaces. Once when most profuse it was arrested by the administration of a hot vaginal douche. She left the hospital before the healing was complete, yet her general health was much improved, and the feces passed in the natural manner.

Endometritis and Painful Menstruation.— Dilation of cervical canal, curettement of uterus and drainage.

Mrs. B., aged 40 years. She complained of considerable pain in the lower part of the abdomen, vesicle irritation and severe intermittent pains during menstruation. The flow, which was scant, contained small clots of blood, the discharge of which was always preceded by pain. There was a moderate amount of uterine discharge which was irritating to the external organs. She stated that several years before she had been operated upon for the cure of lacerated cervix uteri. A physical examination showed stenosis of the os, and an enlarged and sensitive uterus.

The vagina was washed out with a bichloride solution, the os dilated with Goodell's steel dilator, under the influence of ether narcosis. The uterine cavity was large, the sound moving about as in a small abscess cavity. It was found to contain a small amount of tough mucus. The dilation of the uterine cavity was probably due to the presence of secretions from the uterine mucosa and the accumulation of menstrual fluid from the cavity with difficulty. The cavity was swabbed out with cotton dipped into a bichloride solution. A light curetting was done with a dull curette and the cavity again swabbed out, and a thorough application of carbolic acid made to the mucosa. A soft rubber drainage tube was carried well up into the uterus, and the vagina lightly tamponed with iodoform gauze. The patient was kept in bed four days. The third day the drainage tube was removed and the vaginal douches given twice a day. She made a satisfactory recovery, and remained at the hospital until she had passed through one menstruation, which was painless. The pain in lower part of abdomen had gradually disappeared.

OSTEOMALACIA.

BY D. S. LAMB, M.D.,
OF WASHINGTON, D. C.

The following is a description of the skeleton of a woman who died of osteomalacia; it was obtained by me for the Army Medical Museum, where it is catalogued as No. 10,010, Pathological section. Its entire weight is only 2 lbs. 13 oz.

The bones generally show extreme rarefaction; the compact tissue reduced to almost paper-like thinness.

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[1] Gordel's Lessons in Gynecology, p. 214. Fig. 74.

They can be readily cut with knife or scissors, the incision ceasing at the point of the instrument and not splitting the bone beyond; showing the absence of mere fragility. The degeneration is most marked in the bones of the limbs; less so in the head, trunk and pelvis. These in the recent state were more vascular than the bones of the limbs; and of the latter those of the left limb were the more vascular; many bones appeared to be devoid of blood vessels. Medullary cavities and cancelli much dilated; in the recent state filled with fatty and reddish gelatinous matter, in variable proportion. In some places the fat was quite liquid.

The epiphyseal portions of the long bones show multiple fractures; the left femur is the only long bone fractured in the shaft. No sign of repair anywhere. As a rule the periosteum is not thickened, shows no sign of inflammation, and separated quite readily from the bone itself. The tendinous insertions of the muscles separated from the bones more readily than usual. Some of the bones of the limbs floated in water and even in the benzine in which they were degreased.

The cranium is generally thinned but not noticeably softened; sutures still well marked. There is a curious heaping up of bone in the bottom of the right middle cerebral fossa, limited to the greater wing of the sphenoid bone, outside the round and oval foramina. There are also small scooped-out atrophied depressions at the bottom of each middle fossa. Right glenoid cavity enlarged forwards by atrophy of articular eminence; in the left cavity the wasting is less marked. The corresponding condyles of the lower jaw show much erosion, wasting and deformity, most marked on the right side. Alveolar border shows senile atrophy; the right upper bicuspid and third molar teeth not developed; second molar exposed externally by ulceration of alveolar process.

There is firm bony anchylosis of occiput to first cervical vertebra, and of first to fourth vertebræ to each other; some portions of intervertebral cartilages still visible. No fractures of vertebræ, sternum or *pelvis*; several post-mortem fractures of ribs. No deformity of spine or pelvis, except the common right convexity of the vertebral column. Thorax somewhat flattened antero-posteriorly. Pelvic measurements as follows: Superior strait antero-posteriorly, 4.12 inches; transversely, 5.37; obliquely, 4.75. Inferior strait transversely, 4.87; antero-posteriorly not determined because of accident to coccyx.

All the large joints, and many small ones, show fibrous anchylosis; the articular cartilages destroyed and replaced by red connective tissue. Both ends of clavicles atrophied and deformed. Lower ends of humeri anchylosed to bones of forearm; heads of left radius and ulna much wasted and deformed. Heads of femurs anchylosed to acetabula; heads of tibiæ to condyles of femurs; left patella to femur; lower ends of tibiæ to astraguli. Some of the toes dislocated at metacarpal joints. Weight of bones of left foot, including malleoli, half an ounce.

The history is brief, but the best obtainable. The patient was a white woman, single, and about 69 years old at death. She had been sick twenty-six years, and confined to bed about twenty-one years. Said to have had good health until the winter of 1863–4, when she went to Camp Parole, Va., to nurse a sick brother, a soldier, and afterwards remained as a volunteer nurse. She suffered much from exposure to cold, dampness and insufficient food, said to be due to a Confederate raid. She had acute rheumatism of the shoulders, knees and ankles. In 1864 she went to Fairfax Seminary Hospital, still as nurse. Still suffered from rheumatism, and the swelling of the limbs was very troublesome. In 1865, she was appointed a clerk in the Treasury Department, Washington, but became in 1867 so physically incapacitated for work that she was compelled to resign. In 1868 she was admitted to Columbia Hospital for Women, Washington, with a diagnosis of rheumatism. All the smaller joints and the knees were enlarged and tender; she was unable to stand or move, but could sit erect. The muscles of the thighs were contracted, and the knees flexed.

Dr. Mary Parsons, of Washington, for whom I made the post-mortem examination, and who gives this history, was called to see her in the summer of 1883, because of fracture of right leg below the knee, from careless handling in removing the stocking. She was lying nearly motionless; had only slight forward motion of the head and some motion of the wrists. Very little pain; appetite very good; digestion very good, and she slept well. She was very intelligent, well read, quick and eager in discussion, pronounced in opinion; interested in current events; and altogether a "jolly little woman." Motion eventually ceased entirely. About July 1, 1889, the left femur was fractured in the lower third, causing excessive pain. She died from exhaustion July 10.

I made the post-mortem examination, with the following results: Her height was 4 feet 6 inches. The skin, where unbroken, had a yellowish, greasy appearance. Abundance of fat in loose connective tissues everywhere; muscles pale; left thigh showed general venous congestion, corresponding to an oblique fracture of the femur. Fingers misshapen; legs in the position of backward dislocation of the tibia.

The dura mater was strongly attached to the calvarium along the longitudinal groove; brain appeared normal, but the nerves were seemingly enlarged; blood-vessels calcareous and very brittle. The upper half of the cervical spinal cord corresponding to the anchylosed vertebræ appeared normal, but was found, on microscopical examination by Dr. W. M. Gray, of the Museum, to show sclerosis and some infiltration, due to inflammaion; remainder of cord not examined.

The conical papillæ of the tongue were enlarged; tonsils atrophied. Thyroid gland much lobulated and firm. Lesser cornua of hyoid bone not coössified. Larynx normal. The lungs showed but little pigmentation; there were coagula in some branches of the pulmonary artery; bronchi dilated; some hypostatic congestion; a few small indefinitely outlined pigmented indurations which microscopically showed "fibroid phthisis." Pleuritic adhesions and patches of pleuritic thickening. Bronchial glands large and pigmented; one of them calcareous. The heart surface showed abundance of fat, especially on right ventricle; firm, almost universal adhesions of pericardial surfaces to each other; substance of heart fatty; left ventricle dilated; fatty degeneration of mitral valve; aortic valve slightly thickened. Aorta dilated; inside diameter just above valve 1,25 inches; slight atheroma; calcareous deposit around origin of one coronary artery, contracting its orifice.

Liver, 19 oz.; dark; old adhesions to diaphragm;

gall-bladder full of bile. Microscopically the liver showed incipient cirrhosis and red atrophy. Peyer's patches of ileum not visible. Minute ulcers in cæcum, vermiform appendix, and ascending colon. Right suprarenal capsule large; left not observed. Kidneys, each 2.75 oz., somewhat atrophied; capsules readily removed. Abdominal aorta and branches calcareous. Uterus, 2.25 inches long; cervix normal, lips still well marked; abscess in fundus one inch in diameter, distinct from uterine canal, filled with cheesy pus; wall of abscess thin, inner surface rough. Each tube ended, alongside the fimbriæ, in a cyst with chalky wall and yellowish cheesy contents; the right cyst was one inch, the left one-fourth inch in diameter. Ovaries atrophied, smooth. Some pelvic *peritoneal adhesions.*

The rheumatic condition in this case was well marked. The general adhesive pericarditis, valvular disease of heart, dilatation of ventricle and aorta, and possibly, also, the general calcareous condition of the blood-vessels. Also the fibrous anchyloses of the joints of the limbs, and the bony anchyloses, occipito-atloid and of the cervical vertebræ to each other. The sclerosis and inflammatory infiltration of the cervical cord may have been sequelæ of rheumatism.

The diminished mobility from anchyloses and multiple fractures favored the occurrence of local atrophies, both numerical and fatty, and, in my opinion, also the peculiar condition of the bones usually known as osteomalacia. The fractures naturally followed the atrophy, and were due to sudden movements and careless handling.

The absence of deformity is probably explained by the early occurrence of anchylosis confining the patient to bed.

The old uterine abscess and pelvic adhesions suggest the possibility of gestation having occurred, although the history fails to state the fact.

A PLEA FOR STATIC ELECTRICITY.

BY W. F. ROBINSON, M.D.,

OF ALBANY, N. Y.

The old saying, that history repeats itself, seems to be as true in the field of medicine as elsewhere, and may also be applied to static electricity.

It is not generally known that, in the early part of this century, this agent was used for a series of years, by the celebrated Dr. Golding-Bird, at Guy's Hospital, London. The results were very satisfactory, as the published reports of the hospital show, but after Dr. Golding-Bird's death, the art of applying it seems to have been lost, and so it gradually dropped out of use again.

Another difficulty which static electricity had to contend against in former days, was the great inconvenience attendant upon its use. The old machines had to be kept in rooms heated summer and winter, and if any dampness was allowed to enter, the apparatus became useless for the time being.

The present perfected machines, as manufactured in New York, can be run right through the year, and work, with proper care, even in the dampest weather. The question may be asked, Why use this cumbersome and inconvenient form of electricity, when we have at command the ever ready galvanism?

The answer is twofold. First, static electricity has certain great advantages which galvanism does not possess; and second, results may be obtained with this form of electricity, which no other can give us

Galvanism must always be applied to the skin directly, and not only that, but the skin must be wet else the electricity cannot penetrate it. This little circumstance alone often gives rise to no slight annoyance. If you are treating a patient at your office in cold weather, and the underclothing becomes damp from the electrodes. the patient, in going out into the cold air, may catch cold, which will probably more than counterbalance the good which the treatmen has done. Another disadvantage is that the galvanic current, in traversing the skin, is very likely to burn it, if the greatest care is not used, and these burn may leave ugly scars.

Static electricity, or Franklinism, has neither o these objections, for, owing to its high tension, it wil penetrate both the clothing and skin without difficulty, and it can therefore be administered to any part of the body without disarranging the clothing

But the advantages of static electricity are specially manifest, in general electric treatment.

The process of general faradization, though of undoubted value in certain affections, is so tedious and unpleasant, both to doctor and patient, that it can never come into very general use. In order to do i properly, it takes very nearly half an hour, and the wet electrodes have to be applied to every part of the surface of the body in turn.

It is very different with Franklinism. By placing the patient on an insulated stool, the whole body may be drenched, so to speak, with the electric fluid, without any inconvenience to the patient whatever.

Now as to the second point: the special value of Franklinism in the treatment of disease.

Take, for instance, an obstinate case of insomnia Not temporary sleeplessness brought on from accidental causes, and which will yield to most any o the approved methods of treatment, but obstinate insomnia of long standing, where the sufferer goes fo months and months without having a good night's rest. I venture to say that in cases of this kind where the trouble seems to depend on too great sensitiveness of the nervous system to the ordinary irritation of everyday life, there is no known method of treatment which will equal the soothing influence of Franklinism, properly applied.

The obstinate nature of chronic sciatica is well known, and yet this intractable affection will generally yield to a short course of treatment by means of the static spark.

Its action in headache seems almost akin to magical in certain cases. It frequently happens to me to have a patient come into the office complaining of headache, for which I generally give the static douche. Ten minutes of this treatment will often drive the headache away completely.

In lumbago, and in certain forms of rheumatism, where the principal seat of the pain seems to be in the back, this kind of electricity is remarkably efficacious, much more so than either galvanism or faradism.

In all forms of neuroses, and in cases where it is desirable to give general electrization, I am convinced that this form is superior to any other. On account of its high intensity and great penetrating power, in addition to the tremendous quantity which can be developed by the rapid motion of the plates, this electricity permeates the system more completely than any other form, and in cases where the general nervous system is involved and needs toning up, it is much more effective than any other. It has been claimed by the enemies of this form of electricity, that it does not penetrate, and therefore cannot have any therapeutic action, but this seems almost too absurd to discuss. It is this same kind of electricity that splits an oak tree from crown to root, and the idea of its not being able to penetrate the human body, which is an exceedingly good conductor, seems decidedly unlikely, to say the least.

But the discussion of this question would lead us too far, so we will drop it for the present.

It should also be said, that there are certain persons who are unable to stand galvanic electricity, when the current is applied with any power, and in these cases Franklinism is of special value.

I have known cases of rheumatism where the powerful galvanic currents which this disease requires, seemed to have quite an unpleasant effect upon the general nervous system. The very condition of the system, however, which seemed to render it intolerant of one form, made the high tension current all the more available, and the cases (they are quite rare) have responded very satisfactorily to Franklinism.

It should be added that the two forms, galvanism and Franklinism, may be often combined with advantage in the treatment of chronic disease, when the patient remains for a considerable time under the doctor's care.

In short, it may justly be claimed, that an electrician who has at his command a modern static machine capable of generating large quantities of electricity, is much better equipped, and will obtain more satisfactory results in the the treatment of disease, than he who relies on galvanism and faradism alone.

TAPE WORM.

BY JOHN M. BATTEN, M.D.,

OF PITTSBURGH, PA.

I shall only occupy your time briefly with the subject of the tape worms most common to man.

The first case of tænia saginata, or beef tape worm, that came under my observation, was that of a married woman, æt. 40 years, English, mother of eight children. She had been unwell, suffering with the usual symptoms of tape worm, for about two years; the most prominent of which, however, was the passage of segments of the tape worm from her bowels when they were evacuated. I ordered her to fast two days, when I gave her a tablespoonful of the oil of turpentine. At the next evacuation after taking the turpentine, the worm was discharged in its entirety. The worm was about 7 yards in length, and filled an open mouth 6 oz. bottle. The segments of the worm were fat, and yellowish-white. There was a considerable amount of strangury produced after taking the turpentine, but it finally subsided.

The second case of tænia saginata was that of a man, a German 35 years of age, who presented the usual symptoms of the tape worm. I ordered him to fast during a week, and drink as much vinegar as he comfortably could during that time. About the sixth day after this treatment was commenced, he passed a complete tape worm, about 4 yards long. This tape worm was not as fat nor as long as that of the first case. Neither was the patient as fat or healthy as the first patient.

The third case of tænia saginata was that of a female, unmarried, American, æt. 18 years. She had discovered the segments of a tape worm in her stools, and brought some of the segments thus passed to my office, which were conclusive evidence that there was a tape worm inhabiting her small intestines. I ordered her a combination of 1 oz. of pumpkin seeds, including their shells, and 2 drachms of oil of turpentine, made into an emulsion, and to be taken at once after she had fasted two days. The first evacuation of the bowels after the medicine had been taken, she discharged the tape worm complete. The tape worm, like the patient, was healthy and fat, though not as long as that passed by the first patient.

Dr. T. W. Shaw, of Pittsburgh, states that he has great faith in the efficacy of the following medication for tape worm:

℞. Kameela. ʒj.
Ethereal extract male fern, ʒij.
Syr. acaciæ, ℥j.

M. Sig. To be given in two doses, one-half on rising in the morning, and the other half two hours afterwards. A dose of castor oil to be given one-half hour after the last dose.

He states that he has succeeded in dislodging and discharging six tænia saginata in their entirety by the above medication.

Dr. W. F. Barclay, of Pittsburgh, has found in two cases where other remedies had failed, that chloroform internally acted in a perfectly satisfactory manner in discharging the worms. He, however, is careful to select his cases so treated from those who have healthy hearts.

Dr. W. R. Allison endorses the reported action of cocoanut as a tænifuge (*Medical Age*). In a case where male fern effected only a partial removal of the worm, and where chloroform and turpentine were tried in succession without effect, the patient, by chance, ate a cocoanut, and was surprised to find he had discharged a complete tape worm. Since then, the doctor has used cocoanut, and finds that it removes the worm without the usual administration of a cathartic.

It has been proposed by Camp (*Dietetic Gazette*), to give a dose of castor oil in the evening, followed the following morning by twelve 10 gr. doses of thymol, at intervals of fifteen minutes. A dose of castor oil is administered after the last dose of thymol, when the expulsion of the worm may be expected. The suggestion is made that no supper be eaten the day before the thymol treatment. At the time of the expulsion of the worm, the patient should sit on a bowl of warm water, so as to facilitate the passage of the worm entire.

Squibb, in his *Ephemeris*, Vol. i, p. 172, states that, several years ago, he had good opportunities of observing the *location of the* attachments *of the head* in cadavers, and found a great variation in their attachments. Sometimes the head was attached low down, near the ileo-cæcal valve, at other times high up; near the duodenum, and not unfrequently the attachment was in a little pouch, or under a fold of mucous membrane; and that the head was always imbedded in a nidus of firm, jelly-like substance, like inspissated mucus. This led him to the conclusion, that such cases would be very differently affected by treatment, and that an efficient plan of treatment in one case would likely fail in another, owing to the difference in the location of the head; and further, that the obstinate cases were those where the attachment of the head was low down in the canal, and so protected as to be difficult to get the parasiticide to come in contact with the head to poison it, and cause it to loosen its hold. Some years later, when the doctor, with others, became affected with the tape worm, he had opportunities of observation in the treatment of these parasites, and he was confirmed in the belief that the location of the head had much to do in the resistance of these obstinate cases, and that when the treatment was carefully directed by this consideration, one parasiticide was as good as another, when well managed. With further experience in the treatment of patients suffering with this parasite, he was convinced that pumpkin seed and the oleoresin of male fern were the best agents, and that one was as efficient as the other.

He finally recommended a plan of treatment which is as follows: That a light dinner in the middle of the day be taken, no supper in the evening but may drink freely of water. Before going to bed a saline aperient in the shape of one or two seidlitz powders may be given. The aperient should be saline because it causes a copious effusion of serous liquid to flow from the mucous membrane of the whole canal, and thereby the mucous which surrounds the head of the worm is detached and washed away leaving it bared in order to come in contact with the parasiticide. The following morning a second dose of seidlitz powder may be given, whether the bowels have been moved from the first dose or not. The patient is directed to fast and to lie in bed during the dosage.

Four ounces of pumpkin seed, including the shells, are beaten in a mortar, a half ounce at a time, a few drops of water being added from time to time till it is all made into a paste, when the trituration is still continued with gradual addition of water, q. s., to make a pint of emulsion. At 10 A.M., or after the morning saline has operated, a third of a pint of the emulsion is given—in two hours afterward a second third of a pint, and two hours thereafter the remainder of the emulsion. In one hour after the last dose of the pumpkin seeds has been given a half ounce of castor oil may be given, when the discharge of the worm may be looked for.

If the pumpkin seed treatment should fail Dr. Squibb recommends in the second trial, after a sufficient lapse of time, and after preparing the patient with a saline aperient as with the pumpkin seed treatment, to substitute oleoresin of male fern for the pumpkin seed. It may be given in capsules each containing ten grains. Two of these are to be given every quarter of an hour till twelve capsules have been taken, unless nausea should occur. Under such circumstances he considers eight or ten capsules sufficient, or all that can be safely given.

It was formerly supposed that tænia solium, solitary tape worm or hog tape worm, was the most common tape worm and was found most in man, but now it is known that the beef tape worm or the tænia saginata is the most common. The length of the beef tape worm may be from six to thirty feet. It has a small head and holds on to the mucous membrane of the small intestines by four suckers. It may extend along the whole length of the small intestines or it may be coiled upon itself. The segments of the beef tape worm near the head are very small, flat, narrow and short, wider than they are long, but as the distance from the head of the tape worm increases the segments increase in length and width till the length may be from a quarter of an inch to an inch, and the width four or five lines. The segments of the tænia saginata present a yellowish white, thickish and band-like appearance. The farthest segments from the head finally become matured and spontaneously detached and then they are either passed in the evacuation of the bowels or they may creep spontaneously through the anus. The matured segments may either lay or deposit their eggs in the feces before or after evacuation. The tape worm often loosens its hold on the intestines and lengthens itself or shortens itself so as to get a hold on a new field in the intestines. This wriggling, lengthening and shortening, and snake-like curling of itself is likely the cause of many of the uncomfortable symptoms experienced by patients suffering with a tape worm.

The beef tape worm in its maturity exists in the small intestines of man. The measle is found in the muscles, liver and lungs of the beef.

The ripe segments of the beef tape worm exhibit each a papilla in which is the external aperture of the genital apparatus. In the fully ripe segments the uterus is distended with eggs, which can be obscurely seen, but after the segments have been dried the eggs are rendered more visible. It is these eggs, deposited in pasture fields in the feces of man suffering with tape worm, which are licked up by the ox and taken into his system, that finally form the measles in the muscles, liver and lungs of the ox. The measle or larva is subsequently taken into the stomach of man by his eating the raw or insufficiently cooked beef from such diseased meat. This measle then soon develops into the tape worm. It has been known to be reared from the measle in fifty-four days.

The eggs from the hog tape worm, or tænia solium, are first deposited in the feces of man in places accessible to the hog, where the hog takes the eggs into its system. Thus, the meat of the hog becomes affected with the measle. It is by eating this affected meat in a raw or insufficiently cooked condition by man that the measle or larva gains a fruitful field for development in the intestines of man. Commonly, pork is more thoroughly cooked than beef and consequently the hog tape worm for this reason alone would be less common.

The mature hog tape worm is only five to ten feet long. Its segments are thin, white and band-like, and where widest about four lines in width, and one-half inch in length. Its head is smaller than that of the beef tape worm, or about the size of that of an ordinary pin, and has four hemispherical cup-like suckers, and the summit forms a blunt papilla peculiarly armed with twenty-five or twenty-six hooks. The neck is thread like, for about an inch from the head, and then merges into segments, which nearest the head are small and flat, wider than long, but as their situations approach nearer its posterior they are longer and wider but not as wide as long.

The tænia solium is so called from the supposition that it existed solitary in man, but the fact has been recently established that two or more hog tape worms may exist at the same time in the intestines of man. It is of rapid growth and may be reared from the measle in from two to three months. The length of life of the hog tape worm under the most favorable circumstances is about twelve years or more.

The Bothriocephalus Latus, or broad tape worm, is not an indigenous product of this country. It is a more common product in countries where the inhabitants thereof eat fish almost exclusively, as in some localities of Europe, as Sweden, Russia, East Prussia, Poland and West Switzerland. Man may ordinarily become infested with this parasite by eating insufficiently cooked fish. The broad tape worm may be three quarters of an inch wide at its widest part and twenty-five feet in length.

PUDENDAL HÆMATOCELE IN THE NON-PUERPERAL STATE, WITH REPORT OF A CASE.

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FREQUENCY.

Pudendal hæmatocele, in the non-puerperal state, is, according to reliable authorities, of very infrequent occurrence. Thomas (Diseases of Women, fifth edition, page 132,) says: "The accident in the puerperal woman is not very rare, but my experience would lead me to regard it as extremely so in the non-puerperal, since in a practice of twenty-seven years I have met but four cases." A. Breisky, M. D. (Cyclopædia of Obstetrics and Gynecology, Vol. X., page 302), says in speaking of hæmatomata of the vagina: "They do not differ in regard to their mode of origin from hæmatoma of the external genitals. Both probably occur, but very rarely, save in pregnancy, and then only in consequence of direct traumata." Drs. W. H. Parish and J. M. Baldy (Annual of the Universal Medical Sciences, 1890, vol. II., H, page 5,) say: "Hæmatoma in both the puerperal and non-puerperal state are probably more common than is generally supposed."

PATHOLOGY AND CAUSATION.

Thomas (vide supra) says: "The pathology of this condition is similar to that of pudendal hæmorrhage, which has just received notice, for both are results of rupture of the bulbs of the vestibule. In that which we are now considering, the effused blood, instead of pouring away, collects in the tissue of one labium, under the vagina, or even in the areolar tissue of the pelvis, and forms a coagulum;" and on the causation, "The causes are similar to pudendal hæmorrhage, namely: (1) muscular efforts, (2) blows injuring the labia, (3) punctures by small instruments." Parish and Baldy state (vide supra) that "Hæmatoma of the non-puerperal state are the results of falls, blows, kicks, awkward coition, etc."

SYMPTOMS AND TREATMENT.

According to the authors above referred to the symptoms generally encountered are more or less pain, collapse, vomiting, difficulty of micturition, and if the effusion reaches the urethra, obstruction of urination. If the effusions are small, cold, and astringent, applications should be applied, the evacuations of the bladder and rectum regulated, and perfect quiet enjoined. When large, the tumor should be freely incised, the clot removed, and the cavity thoroughly irrigated with a germicidal solution. In case hæmorrhage follows removal of the clot, the cavity should be packed with a tampon previously rendered aseptic and pressure applied.

Mrs. C., æt. about 45 years, mother of several children, youngest twelve or thirteen years old, is a weak, anæmic woman, and has had very poor health for many years.

On October 29, 1891, at 2:30 A.M., was called to see the case, and obtained the following history: Yesterday evening, while walking along the railroad track, she slipped, and, her legs spreading apart, fell, striking the posterior and central portion of the right labium and perineum on an iron rail. She walked home and did not suffer much for some time; then the parts began to swell and became very painful. The husband applied hops, arnica, and other remedies, but without any good result; the pain continued to increase in intensity; nausea, restlessness, weakness, and symptoms of shock supervened until she was nearly frantic. There had been considerable external hæmorrhage, probably from eight to twelve ounces, but this had ceased on my arrival. On examination I found the whole right side of the vulva and perineum enormously swollen, livid, tense and very painful. Gave

℞ Ammonii chloride, ʒiij.
Tr. opii., ʒiv.
Tr. arnicæ, ℥iij.
Ext. lamamelis, dest. q.s. ad., f℥viij. ♍
Sig. Apply freely and constantly to swollen parts by means of thin layer of absorbent cotton.

Also gave.

℞ Morphiæ sulphatis, grs. ii.
Acidi sulphurici aromatici, ʒi.
Aquæ, q. s. ad., f℥ii. ♍
Sig. ʒj every hour or so as needed for pain and nausea.

At 5 o'clock A.M. was called again and found that the lacerated tissues on the inside of the right labia had ruptured and given exit to some fluid blood. Digital examination revealed a clot the size of a large orange; this I removed and washed the parts well with a 1-2,000 bichloride of mercury solution, and syringed out the cavity with a 1-4,000 solution of the same, as hot as it could be borne. I then, as a precaution against further hæmorrhage, packed the cavity with cotton pledgets wrung out of a 1 to 3,000 $Hg Cl_2$ solution, and drew off about twenty-four ounces of urine; this last was accomplished with considerable difficulty, owing to the greatly swollen and distorted condition of the parts. I also administered ʒss. normal liquid ergot, directed that the local applications should be kept up continuously, and that she be kept perfectly quiet.

October 29, 4:30 P.M. Local applications have not been properly applied and pain and swelling very great. As pressure on urethra prevents urination, I drew off a small amount of urine. Removed cotton pledgets and washed out cavity with *hot* bichloride of mercury solution; no hæmorrhage.

October 30. Rested quite well last night; swelling greatly reduced, but injured parts very black; kidneys not acting freely. Last night she urinated once, passing a small amount, and this morning I drew off eight or ten ounces of highly colored urine.

October 31. Better: bowels moved and urinary secretion freer; cavity syringed out as before.

November 2. Very sore and feeling badly; some foul discharge; continue irrigations.

November 3. Better; gave tonic of iron and quinine.

November 5. Swelling much less, but still some discharge; continue previous treatment.

After this she rapidly improved; was sitting up on November 10, and made a satisfactory recovery.

I wish to state in this connection that I am firmly convinced, owing to the patient's weakened condition and general ill-health, that septicæmia with a fatal result would in all probability have followed had it not been for the strict antiseptic treatment adopted.

In conclusion I would present the following summary:

1. Pudendal hæmatocele, in the non-puerperal state, is a pathological condition of rare occurrence.
2. It is always produced by falls, blows, kicks, or external violence of some kind.
3. If the effusion is extensive, the tumor should be freely incised, the clots removed, and the cavity thoroughly irrigated with a *reliable* germicidal solution; *this should be used as hot as it can be borne for its hæmostatic effect.*
4. Hæmorrhage should be controlled by tampons, pressure, and such other means as the exigencies of the case may demand.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(Continued from page 172.)

Professor Houston, on the President's invitation, said: I feel no little diffidence in talking to medical men, as I am neither a physician nor especially skilled in electro-therapeutics. I am, however, a physicist, and since the physicist must join forces with the physician, if any real progress is to be made in electro-therapeutics, I accept with much pleasure your President's kind invitation, and will say a few words as regards electro-therapeutics.

I believe that in the domain of electricity the future is bright with promise, not only along commercial lines, but also as regards the application of the electric force to the curing of disease.

I trust that you will pardon me as an outsider, and therefore as one who is, perhaps, unable to thoroughly appreciate the advances made in electro-therapeutics, although conversant with such general advance, if I say that, to a certain extent, I think the science of electro-therapeutics has been somewhat empiric; that the electro-therapeutist has been groping in the dark concerning the best manner of applying electricity as a curative agent. I offer with considerable diffidence some views that I held for many years concerning the possible direction in which, perhaps, the most marked advance can be made as to the therapeutic effects of this wonderful electric force.

In this age of specialism we certainly have reached a time when it is impossible for any one man to occupy more than a very small corner in any particular field of investigation, and this is especially true in the work of the medical electrician. It seems to me that in order to insure the most marked advance, the physician must work shoulder to shoulder with the physicist.

I would place the qualifications of an electro-therapeutist at a very high level. To properly undertake such work one should be an accomplished electrician, a thorough physicist and chemist, and should know practically everything in the range of the medical sciences. The outlook is very discouraging from the alarming extent of knowledge required, but it seems to me that true progress can only be made along these lines.

I think that you will agree with me that it is practically impossible for any one man to attain such extended knowledge, and that consequently an electro-therapeutist must work hand in hand with those skilled in the branches of knowledge to which I have referred. As a physicist, who claims to know some little about electricity, I offer the following merely as suggestive:

Is it not possible that heretofore rapid advance in the science of electro-therapeutics has been retarded by the, perhaps, natural tendency of regarding the human body as a receptive device alone, rather than an electric source also, as I think it should be regarded? My reasons for this belief are as follows:

1. Various chemical processes are constantly going on in the human body, which must result in differences of potential between the different organs or parts of the body, and these conditions must vary with the normal and abnormal conditions of such parts.

2. The human body possesses differences of temperature, and although these differences are not marked, yet they are probably sufficient for the production of thermo-electric currents; that is to say, the normal differences of temperature must result in differences of electric potential. Abnormal differences of temperature, as in febrile disturbances, must also result in abnormal electric conditions. At any rate, these differences of temperature must result in changes in the electric resistance of the parts, and, therefore, disturbances in the electric conditions of the body. It seems to me that the electro-therapeutist would be very much enlightened concerning the conditions of the body if he could learn to measure the variations in its normal and abnormal currents.

3. The human body shows electric currents of the nature of demarcation currents; that is, currents produced by injuries to nervous or muscular fibres. These currents, as you are well aware, are produced at demarcation surfaces, and result from the chemical decomposition and recomposition going on in such injured parts, in the efforts of such parts to restore a normal condition.

From these and other considerations it would seem to me that the human body should be regarded as an electrical source. Consequently the future electro-therapeutist as a diagnostician will probably have much to do in studying the normal and abnormal electric conditions of the human body.

If this position as to the human body being an electric source be correct, the electric treatment of the future will be directed to establish the normal electric conditions of the body.

In this direction the electro-therapeutist will study—

1. The human body as regards the exact value of the differences of potential of its different parts in micro-volts.
2. The electrical changes in the muscles following conditions of rest or activity, or normal or abnormal conditions.
3. The most difficult of all, the electrical resistance of the various parts of the body.

Of these three directions of study it would seem to me, as an electrician, that the most promising direction of immediate research would be in accurately ascertaining the value of the normal and abnormal resistances of the different parts of the human body, eliminating or making proper allowance for that exceedingly variable element, the resistance of the skin. I need not say to you that if we know the resistance of any organ or part of an organ, or of the whole body or part of the whole body, in ohms, and could measure the differences of potential of the said parts in micro-volts, we will at once know the currents traversing such parts in milliampères.

Under what conditions ought we to expect the resistance of the human body to vary? These, briefly, are as follows:

1. The condition of the skin as to dryness or moisture, as modified by normal or abnormal conditions of the body.

2. The temperature of the parts whose resistance is being taken.

3. The interesting question which I have never seen discussed in medical papers, probably on account of my comparative ignorance of medical literature, as to whether the resistance of the body would be the same from the head to the feet as it would from the feet to the head; or, in other words, whether the human body does not in reality possess a true asymetrical resistance—that is, a resistance which varies when taken in different directions between the same points of the circuit.

If my proposition as regards the human body as being an electric source as well as an electro-receptive organ be true, such resistance would appear naturally to be of the nature of an asymetrical resistance.

4. And probably the most important, the normal or abnormal condition of the body as determined by alterations in the value of its resistance. I think it is a well-established fact that diseased conditions of the body are attended by alterations in the value of the electrical resistance. I know that this is asserted to be the case in Grave's disease.

As I have said before, I offer these views with diffidence, and trust that you will not consider them impertinent, coming as they do from one with no especial experience in your line of study. I offer them as mere suggestions.

Dr. Morton: I rise to move a vote of thanks for the Professor's valuable remarks, and I take a great deal of pleasure in what he has said, as much of his remarks confirm my paper read yesterday. It gave me great pleasure to listen to him in more technical terms. I had one more source which he did not mention, and that is the liquid circulation; but the liquid circulation would be undoubtedly one more electro-motor source, and I had thought of that in connection with my paper, but did not lumber it down with it, as I thought I had more important things—the chemical processes.

I am glad to see that the physicists take more interest in our association, and I welcome him as among the first and most distinguished physicist to come and see us and make suggestions about our work, that we may give the benefit of our knowledge to general humanity.

Seconded by Dr. Hayd and carried.

Dr. Goelet: I think we might go a step further and invite such men to become members of our Society, and we can work harmoniously,

President: Unfortunately that would conflict with our Constitution, which is arranged for a different purpose, and specifies the members should be practitioners of medicine in good standing; but there can be no objection to our inviting them to attend our meetings, and read papers.

Dr. Robinson: I did not intend to touch the penetration of electricity. I also say in reply to Dr. Newman's point to go more into detail of action, that I cut my paper in half and left that part out. I realize that it is too general, but I picked out that which would seem most important and eliminated the balance on account of lack of time, to take up one or two points.

As to polar application, don't you see its absurdity in my treatment? I recommend the direct galvanic alternating. How can you get polarization? As to Dr. Morton, it does not make any difference how much you alternate, you get as much electrolytic action whether you alternate or not. The very moment you get one pole upon the diseased organ you have polar action, but when you have a certain lesion, and put the poles quickly and alternate the current you do not have any polar action.

As to Dr. Goelet, I was very much pleased at his remarks as I think it bears out my theory of vital action. If it were chemical action, the more you gave, the more chemical action you would get. If you give five minutes, you get the vital action, but if you give longer than that, you get an overdose as in any other remedy.

I understand the value of the clay ball electrode but I cannot use it for the reason that I give electricity in my office during one hour, and probably I am outside the next, and I use as many as twenty different electrodes.

I have been very much pleased with the kind reception of my paper and if I have been able to offer any suggestions I am very glad.

Dr. M. A. Cleaves read a paper entitled

THE USE OF THE GALVANIC CURRENT IN ARTICULAR INFLAMMATORY EXUDATIONS.

June 7, 1891, I was called to see M. M., æt. 52; widow, mother of five children, who was suffering from a sub-acute-articular rheumatism of the right wrist and hand. Upon inquiry I found that she had had an attack of inflammatory rheumatism twenty-seven years before, affecting all the articulations of both lower extremities, beginning with the knee, also of left hand and wrist.

She was then confined to bed for three months and was more or less crippled for a year afterwards, but ultimately made a good recovery.

There was no return of the trouble until in February, 1891, when the snow came through the roof of the house into her bed-room, rendering it very damp and chilly.

She developed rheumatism of a sub-acute inflammatory type in the articulations of the lower extremities as before.

Owing to reduced circumstances no physician was called in, but she bathed in bran water and took magnesium sulphate every morning as she had been directed to do in the attack twenty-seven years before.

After a month there was complete recovery so far as the legs and feet were concerned, but she had for a few days a rheumatic stiffness of the neck, and then about the first week in April her right wrist and hand became affected.

She pursued the same course as before with, in addition, occasional applications of tincture of iodine, but there was no abatement of the trouble.

At the time of my visit she had been unable to use her hand for two months. Upon examination I found the hand swollen to about twice its normal size, the infiltration of tissue being especially marked over the carpal and metacarpo-phalangeal articulations, the pitting on pressure plainly indicative of the fluidity of much of the effused material.

There was a decided increase of local temperature, much pain especially, in wrist and in metacarpo-phalangeal articulations of thumb and index finger, and a very extensive capillary congestion, the skin being of a purplish hue. The carpal and metacarpo-phalangeal articulations were in a state of extension while muscular power and sensation were almost lost.

The patient's general condition was not good. Directed a daily sponge bath in water, changing from tepid to cold, and the improvement in general condition was rapid.

June 8, she came to the office for galvanic treatment. Placing the anode at the sternum, I applied the cathode successively (using the ordinary hand electrodes wrapped in absorbent cotton) to the dorsal aspect of the wrist and metacarpo-phalangeal articulations, for fifteen minutes. The applications were stable and current strength 10 M. A. Immediate result, relief from pain during séance, diminution of heat and increased mobility.

The treatment was given daily for one week, then at intervals of two and three days, for six applications more, making in all thirteen séances, in which, with the same arrangement of electrodes, 10 ma. of current were given.

Continued relief from pain, decreased temperature, increased mobility, with ability to partially flex the fingers. After the third a more marked gain in all these particulars and especially relief from the capillary congestion. Mobility of articulations of the thumb greatly increased.

Upon her return for the fourth treatment, she delightedly told me that she had begun to have normal sensation in her fingers and that she had helped to wash the dishes. At that time her general condition was greatly improved. Sleep continuous, appetite was more nearly normal, tongue clean, bowels regular, skin cleaner, and to use her own expression, she was "splendid."

She improved daily and on the 14th of June hand very much smaller, no heat, no pain, circulation good, sensibility increased, less stiffness, flexion good.

On the 15th she did some sewing, and on the 16th sewed all day with no bad result.

On the 19th I find recorded her ability to use scissors in cutting out her work and to lift light weights. The last galvanic treatment was given June 24, and I find on that day the following record: no infiltration of tissues and can close her hand with a good degree of power. General condition good.

After June 29, I gave her, as she came for treatment, five applications of the faradic current, secondary cathode at sternum, anode to motor points and labile to arm and hand, 35 cyl. for from five to ten minutes, with the result of increasing muscular power. In concluding this case I would emphasize the fact that from the fourth day of treatment, this patient has used her hand to a gradually increasing extent in the performance of household duties, and from the eighth day she has sewed more or less every day, oftentimes all day. There is complete recovery of power and mobility.

On August 26, 1891, M. Lewis, æt. 53, married, hat-maker, presented himself at the electro-therapeutic clinic of the New York Post-Graduate Medical School and Hospital, because of partial extension and loss of mobility of right wrist and hand. The following history was elicited: Thirteen months before, he was bitten by a mosquito on the dorsum of right hand, which resulted in blood poisoning. By the third day his hand was immensely swollen, skin almost black and pain intense, extending up the arm. He went at once to Bellevue Hospital as an in-patient. On the third day and for three successive days, incisions were made over the dorsum of the hand, and the arm was cauterized in its circumference at about the beginning of the humerus. The disease followed its usual course, relief from pain and sleep being procured for the first three weeks by means of morphia. At the end of four weeks he left Bellevue Hospital with his arm and hand in splint and bandages. After two weeks, being no better, he went to the New York Hospital, where the apparatus was removed. He continued there for a month, as an out-patient. Certain remedial measures were adopted which are unknown to me.

From there he went to Dewitt Dispensary as an out-patient, and for three months, three times a week, the faradic current was used with one pole on the sternum, the other stabile over the hand—séances lasting about five minutes. From this treatment he made slight gain in muscular power.

Upon examination, I found the condition as follows, viz.: partial extension of all the articulations of wrist and hand save last phalangeal articulation, which was complete. Flexion of the fingers upon the palm left a space of fully 2 inches between the palmar surfaces. Flexion of the wrist was possible to a very limited extent, scarcely changing the hand from its parallel relation with the forearm. In stretching the thumb and index finger to their fullest extent, the right lacked about 2 inches of equaling the left. The thickening was especially marked about the carpal and metacarpo-phalangeal articulations. Pain was complained of on the medial side of the wrist, just above the motor point of the median nerve. There was great loss of power, and an inability to grasp and hold things. The muscular movements necessary to hold scissors or a knife in cutting were impossible.

Diagnosis: Exudations about articulations of wrist and hand and sheaths of tendons, from the extensive cellulitis. Plan of treatment resolved upon: Interrupted galvanic current. Application: Gauze wire electrode 3 by 4 inches, covered with absorbent cotton, over spinal region of brachial plexus and attached to anode. Cathode: Electrode, cotton covered gauze wire 1½ by 8 in., placed successively over carpal, metacarpo-phalangeal and phalangeal articulations, current strength as could be borne. Length of séance from fifteen to twenty-five minutes.

To date there have been eleven treatments. The current strength has varied from 10 to 30 ma., and has averaged 20 ma. each séance. The time has varied from ten to twenty-five minutes, and has averaged twenty minutes for each treatment.

First séance: immediate result, a noticeable increase in mobility of metacarpo-phalangeal and first phalangeal articulations, with relief from pain. After second, continued gain in mobility of carpal as well as above articulations, and ability to bring index finger in contact with thenar eminence. After the fourth séance, could bring middle finger also in contact with thenar eminence, and after the sixth he called my attention to the fact that whereas, at the time of the previous treatment, he could still slip his left index finger between the tip of the ring and little finger and the palmar surface of the hand, it was then impossible to get it through.

The gain in mobility and power continues, although the most marked improvement was made during the first six treatments.

It is now in the condition shown in the second photograph —first two fingers in palmar contact when no attempt is made to flex hand upon the forearm, as was done when the photograph was taken. Also ability to flex hand upon the forearm at an obtuse angle.

Simultaneous stretching of both index fingers and the thumbs leaves a difference of less than ½ an inch in favor of the left hand. The treatment in this case is not yet completed, and we hope for further improvement. He can use his hand in cutting his food, for the first time since the injury.

Moritz Mayer has reported a series of cases which are *en evidence* of the potency of the galvanic current, not only in inflammatory exudations about joints and sheaths of tendons, but in dissipating, as well, hypertrophic callus after fractures.

Two galvano-punctures, negative, were used for the nodosities of callus about the second joint of a man's index finger, four months after the fracture, with the result of decrease in size and movement of the finger itself. Subsequently, to get rid of the callus which was more evenly diffused, the percutaneous method was used, with the anode about the arm, the cathode around the injured finger. A sensible but not painful current was used for from ten to fifteen minutes. After sixteen séances, there was free movement of all three phalanges. There still remained inability to close the hand as before the accident. Operative interference would probably have left the man with a crippled finger and hand.

In a man 79 years of age, with gouty deposits along sheaths of extension tendons of both hands, twenty séances were sufficient for a cure, the anodes, as in the previous case, being a large flat electrode bound around the arm, while the cathode, 5 cm. broad and 20 cm. long, was wrapped around each wrist successively.

Two cases of tendo-synovitis, with hard bodies on the vola side of the metacarpo-phalangeal articulations, were completely cured in twenty and twenty-five séances respectively.

This series of cases, representing as it does, the various stages of the results of inflammatory action about articulations, strikingly illustrates the chemical, cataphoretic and vaso-motor effects of the galvanic current.

It is quite time that we shall recognize, not in isolated cases, but in general work, the value of galvanism in such conditions, and resort to it in good season.

The question naturally arises, could not the case of lipsis have been as successfully treated with the galvanic current, upon the subsidence of the acute inflammation, as the first case, thereby enabling the patient to resume his usual occupation, which he has had to give up, besides giving him a much more useful member than we can now hope to secure?

Why should we wait until the advanced stages, attended as they are, with marked thickening of the articular and peri-articular tissues, contractions of muscle, exudative matter about sheaths of tendons, greater or less impairment of movement and deformity, in which electricity must be our chief resource, when better results can be obtained in a sub-acute condition, before exudative matter has become so fully organized.

There is no danger of developing more acute inflammation. On the other hand it is necessary to excite a more active circulation in the part with a view of removing the congested state of the capillaries and venules, so favorable to the development of fibroid growths.

Massage is a means toward the same end, but while it quickens and equalizes the circulation, it does not possess the powers of galvanism to produce chemical changes.

In the second case it had been used daily from about the seventh week after the injury, or for nearly a year. That it did much to prevent more complete immobility of the articulations there is no doubt, but that its action was limited as compared with galvanism the result clearly proves.

In adopting a definite plan of treatment I was governed by the hypothesis which Dr. Morton has so ably and interestingly presented to us during the session, and upon which we have done our work at the electro-therapeutic clinic of the N. Y. Post Graduate Medical School and hospital for the past four months; viz., "That living means nutrition, nutrition chemical action, and chemical action, under proper conditions, means electric current. These conditions are (*a*) a closed circuit combined with (*b*) any two different tissues, and (*c*) one acted upon, the other not.

Animal currents are proven to exist. The acted upon tissue is an "electro-motive source." It corresponds to the zinc, say, of a primary battery. The electrolyte is the fluid conveying the food to the cells of the acted upon tissues.

The acted upon tissue is always *electro-positive* to some other tissue acted upon. This hypothesis holds true of both normal and morbid nutritional processes. As regards such processes it compels us to base our treatment upon the *broad generalization that every such process is an "electro-positive focus."*

That proliferation is an excessive chemico-nutrition, which the positive pole makes more excessive, the negative pole less excessive, that is, counteracts.

In atrophy, there is a deficient chemico-nutrition, which the positive pole stimulates and restores. The negative pole, on the other hand, makes more deficient or destroys. The results in these cases, united with much that has been done heretofore, are confirmatory of the hypothesis upon which treatment was based.

In the treatment of disease, results are, after all, the main thing, even if we cannot always explain the relation between cause and effect in the use of our remedies, yet once we have a scientific basis for polar action much confusion will be done away with and we will have taken a decided step toward the establishment of a rational Electro-Therapy. The hypothesis of Dr. Morton, based as it is upon well known chemical and physical laws, seems to me to do away with an infinite amount of hypothetical reasoning less surely based, and which has not furthered our knowledge of therapeutical indications in the use of electricity.

In the class of cases with which this paper deals, electricity has been used for many years, but so long as authorities are satisfied with broad generalizations in recommending its use, there will be no progress.

As we are entering upon a new era of electro-therapeutics, evinced by our presence here, it seems to me that every case treated with a definite idea of the action of the chosen current and the polar effect must form a useful contribution to the sum total of our knowledge.

Dr. Von Raitz: I do not think there is any necessity for discussing this paper. I am very much pleased to find that her experience has been made on the law of Dr. Morton so that there is already a foundation for his paper.

Dr. Morton: I think the cases are very well reported and I was pleased with one practical deduction, and that was her delay of the treatment of the electricity until the last minute. Why not apply it early? I think it was a very practical suggestion.

Dr. Von Raitz read a paper entitled

ELECTRICITY IN ANCHYLOSIS.

To whatever cause anchylosis may be attributed, it presents itself clinically as true and false. The true is osseous union of the articular surfaces; the false, fibrous adhesions or chrondroid interposition between the articular surfaces.

In either form we may find osseous, fibrous, and chondroid formation; lent to form true anchylosis, the areas of osseous union of the articular surfaces must be large. A small ossified area will not constitute true anchylosis.

As a guide for prognosis, it is well to remember that, as a rule, suppurative lesions of the joints are followed by true anchylosis, while catarrhal lesions never favor osseous union.

The differential diagnosis is often impossible, and it would be bad practice to reset a joint because it does not yield under either.

False anchylosis, even with some osseous union, yields the constant current with the assistance of massage and passive motion, provided the treatment is carried on earnestly and intelligently. And it is safer to expect an anchylosed joint to be false, and to treat it accordingly, than to use the saw at once.

If after about ten sittings the joint does not improve, we then have time to use the saw.

I have a man with anchylosed elbow and wrist-joints, following neglected erysipelas, which appeared to have undergone osseous union, and which, though slowly, yielded to my efforts. The pus had burrowed into the joints, and was left there for too long a time, therefore bony union can be expected but not diagnosticated.

As to the treatment of anchylosed joints by electricity, we have to remember that the synovial membrane secretes an alkaline lubricating fluid. Therefore our aim must be to help Nature by stimulating its functions.

If we remember the chemical effect of the constant current, we will find that the negative division of it creates an alkaline reaction, which has a dissolving tendency.

That is exactly what we need here. Consequently the affected joint must be enclosed snugly by an electrode and connected with negative pole. Another large electrode may be placed over any indifferent part and connected with the positive pole.

With large electrodes powerful currents can be used without causing pain or inflammation. For the larger joints, up to 100, even 120 ma., in one-half hour sittings, three times per week, are generally sufficient.

Much will depend upon the massage, which has to be given before the current, on the attempts or perseverance of passive motion and on the constitutional treatment; so on the general hygienic conditions.

I will not cite cases, but state that fibrous anchylosis in the knee-joint has yielded me in two months so as to allow the patient to walk upstairs and down without difficulty, and after four months without treatment is well.

I intended to present before you a very interesting case of chondroid anchylosis of the cervical portion of the spine and occiput and both shoulder joints.

That man suffered an injury thirteen years ago, and when I took care of him his head and spine appeared as if cut out of one piece, and not the faintest motion was allowed by any force. The right shoulder-joint was also completely anchylosed; the left shoulder-joint, however, allowed motion to an extent of twenty degrees.

This man improves wonderfully, and I am more than sorry he declined to be here, but hope to get his consent for some other occasion.

Dr. Morton: Cases of fibrous condition have interested me exceedingly. I have seen many of them in the last few [illegible]ars, and I only regret that I did not apply the negative [illegible]e. I recall the case of a lady going around in a chair, and [illegible]d I known as much then as now I should have used it. At [illegible]ny rate, the tendency is to get to the negative pole in these cases. It is a very quiet but remarkable revolution in respect to polarity, and these cases are interesting from that point of view.

Dr. Massey: One point I wish to take up which relates to all three of the preceding papers, which is, instead of using salts, acids, or alkalies on the electrodes, I have found the use of a well-soaped surface more agreeable to the patient and more satisfactory to the operator. It has the effect of making the skin soft and a better conductor, and permits of the free use of the labile method. You will never use anything else if you try it. As to my free use of the negative pole, the reason has been practical. I felt indisposed to pass metallic substances into the body with the positive pole, as it is well known that base metals are affected when used as the positive electrode, the metal penetrating the skin.

Dr. Walling: We forget the electrical conditions of these points. I have been practicing for years, and in negative conditions you want to use the negative pole.

Dr. Morton: I am thankful to Dr. Massey for the absorbent cotton and soap. I find it exceedingly useful in our clinics in more sense than one.

Dr. Von Raitz: I thank Dr. Morton for illustrating some of the points I have said, and which corroborate me.

Dr. Chas. G. Stockton read a paper entitled

THE USE OF THE GASTRIC ELECTRODE IN DIMINISHED PERISTALSIS.

My thanks are due your President for the opportunity of presenting before the American Electro-Therapeutic Association this brief paper on "The Use of the Gastric Electrode in Diminished Peristalsis," a subject which has interested me deeply for several years.

The attempt will not be made to point out the various fields of usefulness for the electrode in gastric diseases. This has come to be too long a story, and although, as might be expected, experience has to some extent modified my views, there can be no doubt that in the majority of cases of indigestion, attended with weakened motility of the stomach, the direct electrical current is of decided benefit.

In the fall of 1887, I began the practice of this method of treatment, and in order to escape the disturbance created by the direct application of the metal electrode to the gastric mucous membrane, I endeavored to protect the stomach by conveying the current through the ordinary stomach tube.

At first an alkaline solution was used in the tube, and by this, the column of fluid was made the conducting medium. A weak current was, in this way, transmitted, but the experience proved unsatisfactory.

A tube was next prepared by running through its entire length a copper wire, which conveyed the current to the stomach, which organ was partially filled with an alkaline solution. In this way I was able to carry a current of sufficient strength for any purpose, but the tube, encumbered by the wire, was not easy of introduction, and necessitated too many introductions at one sitting; for the reasons, that I found it necessary to begin and end with an empty stomach, which in practice meant the use of the simple tube for lavage, the electrode tube for the current, and again the simple tube for the final emptying of the stomach. This frequent introduction of the tube at one sitting led to the creation of the contrivance which I have employed ever since, and which, to my mind, better answers the purposes than any instrument within my acquaintance.

It consists of an ordinary stomach tube, 28 inches long, with two openings made near the distal extremity. At the proximal extremity it is fitted with a hollow steel coupling, which, attached to 3 feet of rubber tubing, makes a continuous syphon about 5 feet in length. With this the stomach is emptied and, without removing the instrument from the stomach, the tube is disconnected at the coupling and a spiral wire, also 28 inches long, is introduced into the tube, and the coupling closed by a polished steel plug at the proximal extremity. In this way the current is conveyed to the stomach admirably, and the gastric mucous membrane is unable to touch the electrode, owing to the rubber covering, save at the fenestræ on either side.

After the application of the current, the electrode is removed, the rubber tubing again coupled on, and the contents withdrawn for study, with but a single introduction and removal of the tube, which resulted not only in the economy of time to the operator, but also in the saving of no little discomfort to the subject.

Having shown that direct gastric electrization is easily accomplished, the usefulness of the method now remains to be discussed.

For the purpose of study, my institution cases, owing to various interruptions of the treatment, are unsatisfactory. I have, however, the complete records of a series of forty cases treated in my office during 1891, which show better results and more positive conclusions than do the records of former years.

This includes cases:

1. Where the motility of the stomach has been simply weakened, as well as those in which it is apparently absent.
2. Those attended with dilatation.
3. Those accompanied with gastric catarrh, atrophy of the gastric mucous membrane, and some in which the hydrochloric acid existed in excess.

We are only now coming to appreciate the importance of weakened motility of the stomach walls as a disturbing factor in the processes of digestion. True, we have occasionally to deal with cases in which there is too great motor activity, and others in which the movement is irregular, either as to manner or time, but these are less troublesome, if not less frequent, than the condition of weakened motility. With weak and slow movements there is delayed absorption, fermentation is induced, the chemistry of the stomach disturbed, and toxæmia of gastric origin, giving rise to many of the symptoms we have been in the habit of calling lithæmic, is the natural result.

In the treatment of these cases, it is best to restrict the diet to those substances which, upon examining the stomach contents, are found most readily digested. The current should be applied after lavage, and the faradic current is that which is usually more satisfactory, and which must be applied in sufficient strength to produce not merely the contraction of the abdominal muscles, but sufficient to induce movements of the stomach itself; which can be determined by palpation over the epigastrium, and sometimes by the forcible expulsion of fluid from the unclosed tube. A current of this strength is easily borne by the patient, provided a large sponge electrode be applied over the back or over the abdomen. It is, however, strong enough to give pain to the patient if made to pass, by accident, through the hand or face.

The sittings should be continued from five to eight minutes, usually beginning with five minute séances, and increasing the duration until the limit of endurance is reached, as shown by an excessive secretion of mucus, a disturbance of digestion, or a feeling of lassitude or pain on the part of the patient.

Having reached this, the proper dosage can readily be estimated. The treatment must be continued, in some instances, for a prolonged time; in other cases, relief follows a few applications.

I can well understand how disappointment to physician and patient would ensue, after the persistent use of this method for several weeks without marked benefit, but in a few cases, after months of patient effort, success has at length come, and I have now no hesitation in applying electricity at intervals for six months, if necessary, to establish a satisfactory peristalsis, without which some patients cannot be well.

In the case numbered "4" in this series, the patient was a neurotic woman whose digestion seemed perfect, with the exception of delayed emptying of the stomach. Under a prolonged treatment by diet and electricity she was better and worse from time to time for three months, before a decided improvement occurred. At length the stomach showed the ability to empty itself at the proper time, and absorption from the stomach also became more active. From this time onward there was slow and steady improvement. It was nearly eight months before the patient was discharged well, a result which I think was mostly owing to electricity, for when this treatment was discontinued, and lavage, diet and medication alone employed, she steadily lost ground, which was regained upon the reëstablishment of faradization.

Not so discouragingly long is the case No. 23, that of a young woman 28 years old, who had for several years suffered from intense headache. Her blood was 20 per cent. deficient in hæmoglobin, her complexion muddy, her tongue coated, bowels constipated, her sleep was disturbed and she was intensely nervous, with complete loss of appetite; indeed, she said she had not been hungry more than once or twice during the past several months. She made no complaint about her stomach, except that occasionally she would have a headache more intense than others, at which time she would vomit, and after which attacks she felt relieved of her symptoms.

After subjecting her to various forms of treatment, I turned the case over to my associate, Dr. Allen Jones, for further study. The doctor at once turned his attention to the stomach, and discovered that there was almost complete loss of peristalsis, the food remaining indefinitely and undergoing fermentation which, doubtless, gave rise to the toxæmia and the other symptoms. After lavage she felt relief for a few hours, but her symptoms very soon returned, and no positive improvement occurred until the use of the direct electrical current, after which, she made rapid progress, considering the long duration of her illness.

The patient recognized the importance of the treatment, and asked for its renewal when it was temporarily discontinued. After two months the case was discharged well, and yet this young lady had been dosed with iron and various other reconstructives for years without the slightest benefit.

As soon as her stomach regained its motility the evidences of toxæmia disappeared; that is to say, she had a good complexion, with clear skin, and was without headache, nervousness, and sleeplessness; her bowels became regular, and she regained her strength. From day to day it was observed that less food was present, less fermentation, the absorption improving as there was evidence of increased motility.

In some cases the greatest benefit appeared to follow after half a dozen sittings.

In No. 20 we have a case in which the treatment had to be discontinued because of the debility which appeared to follow the use of even a moderate current. The patient was a neurasthenic, single woman, 40 years old, who had suffered for years from mental pain and neuralgia, weak heart, disturbed sleep, and the usual symptoms belonging to her class. Her digestion was in every way atrocious, and remained rebellious to every form of treatment which I applied. Perhaps nothing which I did seemed to disturb her more than electricity.

I must not spend too much time on this part of my subject; but before leaving it, let me say that in a few instances I have found greater benefit from the application of the continuous current, with occasional interruptions, than by the faradic current, which one would naturally apply.

Let us pass on to the discussion of electricity in the treatment of poor motility associated with dilatation of the stomach. There is no question about the importance of the measure here. In fact, I can conceive of no way of relief to the sufferers from gastroectasia save by electricity and massage. The faradic current is usually the more satisfactory, and under it there will be found moderate improvement appearing after a comparatively short time; but a great improvement is not usually obtained until months of almost daily stimulation to the gastric musculature enables the stomach to maintain its position, keep to its normal size, and empty itself properly.

Twenty-one in this series of forty cases showed greater or less dilatation as demonstrated by accurate measure. Of this number, twelve showed dilatation of an extreme degree. Some are still under treatment, but five are discharged as cured. All have been greatly benefited, and a number have regained to such an extent that absorption takes place properly, and the stomach is emptied quite uniformly five or six hours after an ordinary meal. This may not impress you as being a remarkable record, but when you consider that the twelve cases were all severe ones, that they have all been benefited, that some have been cured, that others of them are nearly well, I think it will be considered a triumph as compared with any other course of treatment hitherto suggested for the relief of this persistent and very serious condition.

I can only allude to that class of cases in which the stomach movements are diminished, and which cases are associated with gastric catarrh, gastric atrophy, or excessive secretion of hydrochloric acid. These complications (if they may be so called) often interfere with the regular course of electrical treatment, and each case must be studied by itself.

The cases in which there is marked gastric catarrh do best under the continuous current. The anode is applied within; the cathode, with a large sponge electrode, applied over the back, and a dosage, ranging from 8 to 15 milliampères, generally employed.

With the current occasionally interrupted, as before described, the dilatations may be relieved, and, not infrequently, the catarrh also improved. In instances of atrophy of the mucous membrane either current may be employed. The continuous current is useful here, because it is more potent in stimulating the secretion of hydrochloric acid than the faradic.

Occasionally an excess of hydrochloric acid interferes with the electrical treatment. This, however, is very unusual, and generally then but temporary.

It, in my opinion, should be a rule that the treatment in ordinary instances should be applied at bed-time, and the stomach left empty and at rest during the night. This plan, however, will prove impracticable when there is great excess of hydrochloric acid, for this so disturbs the empty stomach during the long hours of the night that the patient not infrequently loses sleep or wakens in the morning feeling miserably.

These are among the most important points as regards *exceptional cases.*

These remarks may suffice to give a general idea of this method of treatment, and although I feel tempted to speak with greater particularity, such a course might prove tedious to the hearers.

In closing it may be well to affirm that in nearly every case of weakened motility, electricity by direct application is of the utmost importance.

The exceptional cases are those which are associated with malignant disease, a few rare cases accompanied by gastric ulcer and weakened motility occurring in some instances of general neurasthenia, in which electricity, no matter how or where applied, is resented by the patient.

It is necessary, in order to obtain success, for one to study carefully his cases as regards diet, and avoid over-taxing the digestive strength of the individual. Over-feeding, under-feeding, or the taking of improperly prepared foods, are not infrequently as powerful obstacles to success as the taking of foods unfitted to the given case.

Dr. L. Wolff, Philadelphia, physician to the German Hospital, Demonstrator of Chemistry, Jefferson Medical College, etc., read a paper entitled

ELECTRICITY IN DISEASES OF THE STOMACH.

The employment of electricity to influence functional activity of the stomach, both by the constant as well as the induced current, has been advocated quite early in the development of electro-therapeutic science. It was stated by Ziemssen in 1877, that the muscular coat of the stomach was contracted on being connected with the current, and that its contractions were continued on in the pyloric portion, but only little so in the fundus, and the circular fibres more so than the longitudinal; also that it required to produce energetic contraction to have the viscus partly filled with water and air. Under those conditions the gastric lumen was diminished and part of its contents were expelled through the pyloris. These experiments conducted on animals were also confirmed by other observers both in man and animals. It was further shown that the glandular activity was increased, especially so by the employment of the galvanic current.

The experiments referred as well to the bi-polar external application of the electrodes as also to the introduction through gastric fistulæ in animals and the œsaphagus in man of one of the poles. Ziemssen states that the effect of strong currents applied with large poles externally while acting both on the abdominal parietes, was manifest to the patient by sensation of warmth in the stomach and increased desire for food, followed by a considerable improved digestive action. This is not alone the case in normal stomachs, but also found under pathological conditions, such as old gastroectases, and chronic dyspepsias. If one of the poles is introduced into the stomach containing some water this action is admittedly more marked and energetic, though by older writers on the subject it was thought impracticable for therapeutic purposes. Erb, in his hand book on Electro-Therapeutics, after quoting the promiscuous use of electric currents in various affections of the stomach, mostly of the nervous variety, and by the bi-polar external application, thinks it of use principally in atony and dilatation, especially arising from nervous debility and central disease. He claims, thus, to obtain contractions of the muscular coat of the stomach, and advises its use jointly with lavage. Leube recommends the electric current in gastralgia with anode over epigastrium and on the seat of pain; Brenner cured a sensory neurosis of the œsophagus by the application of a constant current along the pneumogastric with anode at the back of neck and cathode between sterno-cleido-mastoid. Nervous vomiting has been successfully treated both by the faradic and galvanic currents, also nervous dyspepsia, for which Beard and Rockwell recommend general faradization; when associated with neurasthenia, Stein recommended the use of the faradic current by the employment of one pole each in either hypochondria. Erb states that the muscular fibres of the stomach react to electric currents by slow contractions gradually increasing in a peristaltic manner. They respond more readily to the faradic than the galvanic current, the former producing palpable peristaltic movements of the stomach and intestines with gurgling sounds. Schliep observed that water previously introduced into the stomach rapidly disappeared after faradization. Erb, already noted that the internally applied electro caused very little sensation. Onimus recommends the galvanic current from epigastrium from back and from lesser to greater curvature, while Fuerstner and Neftel employed faradism over the dilated stomach. Erb thinks it most serviceable to apply a large electrode to the back immediately to the left of spinous processes on level with cardiac end of stomach, and the smaller to the epigastrium. Thus the current produces vigorous contractions of the abdominal muscles. With the galvanic current, he recommends the anode to the back and the cathode labile over the stomach after the latter had been washed out; he also considers that there will be rarely occasion for the use of an internal electrode. Pepper, at an early period, stated that external faradization of the stomach, produced little more than contraction of the abdominal muscle. I have quoted, at random, short notes on the subject from current literature, to show that electricity, while universally esteemed as a therapeutic agent in diseases of the stomach, found by its many advocates a most diverse and varied method of application. Undoubtedly the painful neuroses may be controlled by galvanic current and the glandular secretion by it increased, but the principal application of electricity in gastric affections, consists in the motor stimulation by means of the faradic current, when the atony of its fibres have caused more or less permanent dilatation.

It is due to more recent efforts that intra-ventricular treatment by means of soft stomach tubes, has been popularized, and that also intra-ventricular faradization has been revised. The objections made by Ziemssen and Erb were refuted by Ewald, who had done so much in every respect to enlarge our knowledge of the stomach, its functions and diseases. While this latter experimenter has definitely proven that with large electrodes and a strong faradic current, externally applied, salol was more rapidly eliminated from the stomach than without it; he decidedly gives the preference to intra-ventricular faradization over the external method in the treatment of gastroectasis, with the distant electro either applied to the epigastrium or better still, in the rectum. My own experiences in the treatment of affections of the stomach, have lead me early to apply the two electrical currents. I shall first take up the use of galvanism in this connection. Its application with a view of exciting increased glandular secretion has been, in my opinion, decidedly overrated. I have at no time been able to detect by chemical means an increase of HCl in the gastric juice after the external application of the galvanic current in the manner as mentioned by the investigators heretofore. This will show at once that digestive ability has not been improved, though larger secretion might have been achieved. As internal galvanization with a view of improving digestive powers, could only be practiced in a previously empty stomach, and then partially filled with water, its value, if it possessed any, would not be available. Yet I have found the galvanic current useful and of the greatest value in dilating traumatic strictures of the œsophagus. To illustrate this, I will quote here the following case:

Mr. P. J., a French gentleman, fifty-five years of age, was admitted to my service at the German hospital of Philadel- with an œsophageal stricture. He stated that this arose from having swallowed in mistake, a considerable quantity of strong HCl some eight years previous. He had since then been obliged to restrict his diet to liquid and semi-liquid food. He had been under treatment in various hospitals and under private practitioners, both here and in Europe; the methods employed in this purpose were gradual dilation with the ordinary œsophageal sounds; at no time, according to his statement, had he been benefited sufficiently to eat solid or coarse food; on examination, the stricture was found of a calibre to barely admit a 27 mm. bougie; gradual dilatation was practiced for some days, and larger bougies were only with some difficulty passed. The use of metallic bougies connected with the galvanic current then suggested itself to me; ideal currents from five to ten ma. were used, and it was noticed that the bougie passes under its influence with greater facility and could be readily increased in size; daily séances were held and by doing so the stricture was rapidly dilated to 50 mms.; this took only a period of about three weeks, at which time the patient was capable of eating ordinary diet, and was discharged at his own request. Nothing has been learned of him since. I am hardly prepared to attribute the success in this case to direct use of galvanism or to the absorption of the stricture by cataphoresis, but I am firmly convinced that the galvanic current facilitated mechanical dilatation in a most astonishing manner. The current strength during the treatment was often increased to 20 ma. and over without having experienced any untoward influence upon the pneumogastric, which Ziemssen and others caution against. in such procedures. My electrode, which I here exhibit, is of the very simplest kind. It consists of a soft, copper wire, at the lower end of which is a thread for screwing on the olive shaped sounds, while at the other end is screwed on a clamp for the reception of the wire; the wire itself is insulated by being covered with a soft rubber tubing. When in use, a large flat electrode is applied over the epigastrium, and the sound is inserted into the œsophagus to the stricture before connection is made; the current is then gradually turned on and increased until perceptible sensation, under the external electrode is experienced by the patient. When removing the œsophageal sounds after it had been passed, the stricture, the current should again be disconnected.

The only other application of electricity in the diseases of the stomach which I have found serviceable, consists in the faradic stimulation of the muscular fibres in atonic ectasis. I have described this before in a paper on the subject of gastroectasis—*Therapeutic Gazette*, July 15, 1891—and will, therefore, merely state here, that it is a most potent factor in the curative treatment of this disease. I can fully confirm all that the former writers on this subject have already stated, and, while lavage and other treatment is indispensable to overcome the chemical defects of digestion, it is faradization alone that will restore the motor power of the atonic muscular fibres. The individual sensation of the patient is never one of discomfort, nor does the presence of the tube during the séance, which need never to exceed five to ten minutes, trouble any of those patients who have been educated to the mechanical treatment of the stomach by lavage. It has been my custom to wash out the stomach before the principal meal of the day, and after this the patient is requested to drink about two glasses of water. This is followed by swallowing of the tube containing the electrode which I here exhibit and describe below. The current is then turned on, first gradually, and until peristaltic contraction is apparent to the hands applied to the parietes, or to the eyes. The external electrode I generally apply to the epigastric region, and is usually a large and broad sponge. The internal electrode must be sufficiently deeply introduced to insure its immersion in the water contained in the stomach. A patient describes the sensation in the stomach as devoid of pain, but one of rather active contraction of the viscus. As in the former case, my electrode is very simple, and as you will see, while I exhibit it to you here, it consists of a small stomach tube with two fenestræ; through the tube I have drawn a small insulated copper wire, letting the end come out of the lower fenestrum; this end I have denuded about 2 or 3 inches of its insulation, and have twisted into a small spiral, the size of the lumen of the tube. This spiral I have slipped through the fenestrum back into the tube, in such a manner that it appears within it, without being able to come in contact with the stomach. The upper end of the wire is also twisted into a small spiral for the reception of, and connection with, the battery wire.

Einhorn has recently advocated the use of a covered mandrel attached to an insulated wire. I consider the one I have just described will be found much more simple, and the safest that can possibly be used, and it assures at once, by its greater firmness, that the lower end of the electrode shall be immersed in the water contained in the stomach.

DOMESTIC CORRESPONDENCE.

Medical Teaching Methods.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Whilst this question of teaching medicine is going the rounds of the journals let me have my say on the subject. I consider that the present mode of teaching medicine should be reversed; or, in other words, the horse should be put in front of the cart instead of behind it. The lecturer or teacher goes to his class full of the subject matter, whilst his students know little of it. They sit like bumps on a log whilst their very eloquent teacher (?) tells them all about, or develops the subject.

Suppose the teacher says to his class that to-morrow, between the hours of 11 A.M. and 12 M., we are going to have the subject of typhoid fever for discussion, and I wish you to familiarize yourselves fully with the subject; I will call on any one of the class to develop the subject. The next day at the designated hour Student A. is called on to go to the blackboard to divide the subject into parts. He writes on the blackboard—name, Typhoid Fever; what the name implies—History; symptoms—Pathology, Diagnosis, Prognosis, Differential Diagnosis, and Treatment. This done, Student B. is called on to give a definition of the words typhoid and fever, and what the words imply. C. is then called on to develop the symptoms; D. the history; E., diagnosis; F., prognosis; G., differential diagnosis; H., treatment. In this way the subject could be made interesting. The dullest or laziest should always be called on first to develop a subject, and so on to the brightest and most diligent, to finish the subject. After the subject had been developed by the students, anything pertaining to the subject that had not been developed by the students then it would be the teacher's duty to fill in omissions.

In this way, instead of the teacher going to his class crammed with the subject, both students and teacher would enter the class perfectly familiar with the subject, and the teacher would soon find he had no drones in his class, and there would be no napping. The practice of medicine with all its branches could be made interesting by this mode of teaching, and, what is most important, they would be taught to think and speak extempore. JOHN M. BATTEN,

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The condition of her mouth is as follows, and seems to the writer to offer a solution of the trouble: The teeth were covered completely by tartar, and the enamel was easily scraped off. When the tartar was removed the little girl seemed to be in great agony. The teeth would ache, sometimes in one tooth and sometimes in another; the pain was intense and neuralgic in character, lasting from ten minutes to one hour. There were no cavities, because the tartar, being alkaline, prevents the decay of the teeth. The child is taking plenty of nourishment, but the phosphates and carbonates are not assimilated, as indicated by the condition of the osseous and nervous systems, and also by the large amount of tartar on the teeth.

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DR. WEIR MITCHELL, in the current number of the *Century*, has given some graphic sketches of the bad traits of practitioners at the bedside. They may be found in "Characteristics"—a thinly medicated serial—where he speaks briefly of the man who is by nature tender in his contact with the sick, but also fo the imitation sympathizer who does not long impose upon the sick; "for there is no place," he says, "where good breeding has so sweet a chance as at the bedside. There are many substitutes, but the sick man is a shrewd detective, and soon or late gets at the *true man inside* of the doctor."

INEBRIETY AND RAILROAD ACCIDENTS.

Statistics for 1891 show that in round numbers, over twenty-five hundred persons were killed instantly, and over twenty-two thousand were injured, by accidents on railroads in this country. The mortality of passengers was greater in 1891 than for several years past. These figures are very startling, and indicate a greater fatality, comparatively, than in any of the modern wars. One of the causes is clearly the free use of spirits by the operatives and trainmen. Most of the companies recognize this, and have adopted rigid rules against the use of spirits, and promptly discharge men who are seen drinking. The efforts to employ only total abstainers are a partial success in most companies. The trainmen on the trunk lines, as a rule, are of the better class, and give but little evidence of the use of spirits. Yet some of the severe accidents of the year pointed clearly to a state of mental confusion and recklessness that come from alcohol, in those who were responsible. Many men who claim to be temperate, use spirits at home as a domestic medicine, and frequently by the advice of some unthinking physician. These persons never drink in public, or for social purposes, and yet they are dangerous alcoholics, because unsuspected, and likely any moment to do strange, insane acts.

Psychologically, railroad men, of all others, are most exposed to this form of drinking. The nerve and brain strain, and irregularities of living, sharply predispose to exhaustion, insomnia, and all its train of associate dyspepsias and neuralgias. Alcohol in any form is a most seductive narcotic. The mental activity and attention constantly required in every position, makes railroad employment far more exhausting, and perilous to brain health. Coupled with this is associated a sense of peril and danger that is a perpetual strain on the nerves. The irregularities of the work, preventing regular rest, sleep, food and change, are followed by functional, then organic diseases. The kidneys, heart, stomach and coördinating centers fail first, and the use of spirits covers up these symptoms of exhaustion most effectually. The brain fails, although this symptom is less prominent, and duty is performed more automatically, and emergencies are attended with brain confusion unexpected and unusual. This is the period when medical advice may be fatal. The man may be a secret alcoholic drinker, and a prescription with spirits may unmask and precipitate a long train of degeneration. Or, if an abstainer, the alcoholic narcotic may be so grateful and pleasing as never to be abandoned. Railroad companies cannot prevent their employés from drinking spirits. They can force an appearance of temperance in the performance of duty, but they cannot prevent brain injury from the secret use of alcoholics. Hence accidents will follow, because responsible persons have weakened and impaired judgments. Shorten the hours of labor, give responsible men more time to rest, with better opportunities to live regularly, and a very important means of prevention will be applied.

Surgeons of railroad companies have a splendid field for prevention, in advising and regulating the health of operatives. It has been asserted that one-third of all accidents are due to brain failure and confusion depending on the use of some form of spirits. Whether this is true or not, a certain number of accidents can always be traced to the damaged alcoholic brains of some one. A certain number of night trainmen are discharged every year for using spirits. This would not occur if the officers of the company had a medical superintendent of employés. Trainmen and all responsible persons should be inspected daily with more care and caution than engines or the machinery of the road. A single accident cost a leading road over two million dollars. The failure of an over-worked telegraphic operator, who was keeping awake on spirits, and a conductor who drank in secret were the cause. A tired-out brakeman with a flask of spirits in his pocket failed to flag an express, and a frightful accident followed. A railroad surgeon to attend to the wounded is of very small importance compared with a medical superintendent, who would have regulated the duties and prevented over-worked, exhausted men from being placed in positions requiring clear reasoning and healthy brains. The medical side of railroading is a sanitary field not occupied as yet. The terrible fatality of the past year has a loud call for means and methods of prevention. Hundreds of men are trying to find mechanical means and remedies, and the surgeon should be equally active to point out the risks from the service of brain-exhausted and defective men. Moderate drinkers and those who drink while off duty for medicinal purposes, or otherwise, are more dangerous than defective, weakened engines. The companies are ready to welcome any means which will lessen the risk and increase the safety of its work. Evidently not far away in the future the brain-and-muscle service of railroads will be subject to medical inspection and control, and many sources of accidents that occur now will be effectually prevented. The companies will learn that if they expect its army of responsible men to be sober and of clear, healthy brains they must regulate the conditions and surroundings of the service to assist and favor this condition. The farce of pretending to employ only temperate men, and permitting the free sale of spirits on the trains and stations on the road, will disappear. Nothing can be more stupid than *this* exposure of operations to the free use of spirits under the worst possible conditions. A medical supervision would correct this. Railroad surgery compared with railroad sanitation is practically nothing. No matter what rules or regulations are in force, so long as spirits are sold indiscriminately on the road and on trains accidents will follow from defective judgment caused by alcohol. As long as men holding responsible positions are over-worked and neglected they will find relief and medicine in alcohol, and some time, and some where, make a fatal mistake for the company. This record of death and injury has a medical side of great interest that must come into prominence in the near future.

ADULTERATION OF FOODS AND DRUGS.

An evidence of progressive enlightenment comes to us in the form of "A Bill recently introduced in the United States Senate, for preventing the adulteration of food and drugs, and for other purposes."

This bill is so commendable and worthy of the attention of the medical profession, that we take pleasure in giving it space in our pages. Our only regret is that there is not a Department of Public Health to take hold of the measure and conduct it in the interests of the people. In fact, the bill is an indication of the necessity for such a Governmental Department. Those of our readers who have not already urged that measure upon their Congressional representatives, will be good enough to do so at once, also directing attention to the accompanying bill. Delays are always dangerous, and in the practice of medicine, many a time mean death of the patient. So in the pushing of the Bill creating a Department of Public Health. Delayed efforts may place it in a condition of somnolency that will require a good deal more shaking and stimulation to effect its passage than if pushed with vigor at this immediate time. If you have not already done so, write to your Congressional Representative and United States Senator, and do this at once.

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A Bill introduced in the United States Senate by Mr. Paddock, for preventing the adulteration and misbranding of food and drugs, and for other purposes:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, for the purpose of protecting the commerce in food products and drugs between the several States and Territories of this Union and foreign countries, the Secretary of Agriculture shall organize in the Department of Agriculture a section to be known as the food section of the chemical division, and make necessary rules governing the same, to carry out the provisions of this act under direction of the chief chemist, whose salary for such increased work shall be in addition to his present salary the sum of fifteen hundred dollars per annum; and whose duty it shall be to procure from time to time, under rules and regulations to be prescribed by the Secretary of Agriculture, and analyze, or cause to be analyzed or examined, samples of food and drugs sold or offered for sale in any State or Territory other than where manufactured. The Secretary of Agriculture is hereby authorized to employ such chemists, inspectors, clerks, laborers and other employés as may be necessary to carry out the provisions of this act.

SEC. 2. That the introduction into any State or Territory from any other State or Territory or foreign country of any article of food or drugs which is adulterated within the meaning of this act is hereby prohibited, and any person who shall ship or deliver for shipment from any State or Territory or foreign country to any other State or Territory, or who shall receive in any State or Territory from any other State or Territory or foreign country, or who, having so received, shall deliver, for pay or otherwise, or offer to deliver to any other person, any such article so adulterated within the meaning of this act, shall be guilty of a misdemeanor, and for such offense be fined not exceeding two hundred dollars for the first offense, and for each subsequent offense not exceeding three hundred dollars, or be imprisoned not exceeding one year, or both, in the discretion of the court.

SEC. 3. That the chief chemist shall make, or cause to be made, under rules and regulations to be prescribed by the Secretary of Agriculture, examinations of specimens of food and drugs which may be collected from time to time, under rules and regulations to be prescribed by the Secretary of Agriculture, and under his direction in various parts of the country, and publish in bulletins the results of such analyses. But the names of manufacturers or venders of such foods or drugs analyzed shall in no case be published in such bulletins until after conviction in the courts of violation of this act. If it shall appear from such examination that any of the provisions of this act have been violated, the Secretary of Agriculture shall at once cause a report of the fact to be made to the proper United States district attorney, with a copy of the results of the analysis duly authenticated by the analyst under oath.

SEC. 4. That it shall be the duty of every district attorney to whom the food section shall report any violation of this act to cause proceedings to be commenced and prosecuted without delay for the fines and penalties in such case provided, unless, upon inquiry and examination, he shall decide that such proceedings cannot probably be sustained, in which case he shall report the facts to the food section.

SEC. 5. That the term "drug," as used in this act, shall include all medicines for internal or external use. The term "food," as used herein, shall include all articles used for food or drink by man, whether simple, mixed, or compound.

SEC. 6. That for the purposes of this act an article shall be deemed to be adulterated—

In case of drugs:

First—If when sold under or by a name recognized in the United States Pharmacopœia it differs from the standard of strength, quality, or purity according to the tests laid down therein.

Second—If when sold under or by a name not recognized in the United States Pharmacopœia, but which is found in some other pharmacopœia or other standard work on materia medica, it differs materially from the standard of strength, quality, or purity according to the tests laid down in said work.

Third—If its strength or purity fall below the professed standard under which it is sold.

In the case of food or drink:

First—If any substance or substances has or have been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength, so that such product, when offered for sale, shall be calculated and shall tend to deceive the purchaser.

Second—If any inferior substance or substances has or have been substituted wholly or in part for the article, so that the product, when sold, shall tend to deceive the purchaser.

Third—If any valuable constituent of the article has been wholly or in part abstracted, so that the product, when sold, shall tend to deceive the purchaser.

Fourth. If it be an imitation of and sold under the specific name of another article.

Fifth. If it be mixed, colored, powdered, or stained in a manner whereby damage is concealed, so that such product, when sold, shall tend to deceive the purchaser.

Sixth. If it contain any added poisonous ingredient or any ingredient which may render such article injurious to the health of the person consuming it.

Seventh. If it consist of the whole or any part of a diseased, filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or of an animal that has died otherwise than by slaughter: *Provided*, That an article of food or drug which does not contain any added poisonous ingredient shall not be deemed to be adulterated—

First, in the case of mixtures or compounds which may be now or from time to time hereafter known as articles of food under their own distinctive names, and not included in definition fourth of this section;

Second, in the case of articles labeled, branded, or tagged so as to plainly indicate that they are mixtures, compounds, combinations, or blends;

Third, when any matter or ingredient has been added to the food or drug because the same is required for the production or preparation thereof as an article of commerce in a state fit for carriage or consumption, and not fraudulently to increase the bulk, weight, or measure of the food or drug, or conceal the inferior quality thereof: *Provided*, That the same shall be labeled, branded, or tagged, as prescribed by the Secretary of Agriculture, so as to show them to be compounds: *And Provided further*, That nothing in this act shall be construed as requiring or compelling proprietors or manufacturers of proprietary medicines to make public their trade formulas;

Fourth, where the food or drug is unavoidably mixed with some extraneous matter in the process of collection or preparation.

SEC. 7. That every person manufacturing or exposing for sale, or delivering to a purchaser, any drug or article of food included in the provisions of this act, shall furnish such drugs or articles of food to any person duly authorized by the food section to receive the same, and who shall apply to him for the purpose, and shall tender him the value thereof in a sample sufficient for the analysis of any such article or articles in his possession, and in the presence of such dealer and agent of the food section, if so desired by either party; said sample shall be divided into three parts and each part sealed by the seal of the food section. One part shall be left with the dealer, one delivered to the food section, and one deposited with the United States district attorney for the district in which the sample is taken. Said manufacturer or dealer may have the sample left with him analyzed at his own expense, and if the results of said anaysis differ from those of the food section, the sample in the hands of the district attorney shall be analyzed by a third chemist, who shall be appointed by the president of the Association of Official Agricultural Chemists of the United States, in the presence of the chemist of the food section and the chemist representing the dealer, and the whole evidence shall be laid before the court.

SEC. 8. That whoever refuses to comply, upon demand, with the requirements of section seven of this act shall be guilty of a misdemeanor, and, upon conviction, shall be fined not exceeding one hundred nor less than ten dollars or imprisoned not exceeding one hundred nor less than thirty days, or both. And any person found guilty of manufacturing, offering for sale, or selling an adulterated article of food or drug under the provisions of this act shall be adjudged to pay, in addition to the penalties heretofore provided for, all the necessary costs and expenses incurred in inspecting and analyzing such adulterated articles which said person may have been found guilty of manufacturing, selling, or offering for sale.

SEC. 9. That in prosecutions for violations of this act, proof of the act done shall be held to imply knowledge and intent on the part of the accused, unless such knowledge and intent shall be disproved on the trial. If it be shown that said dealer is innocent of any intentional fraud, then the action in court shall lie against the dealers having furnished the accused the articles in question and these dealers shall be parties to the suit.

SEC. 10. That this act shall not be construed to interfere with commerce wholly internal in any State, nor with the exercise of their police powers by the several States.

SEC. 11. That, for the purpose of enabling the Secretary of Agriculture to carry this law into effect, there is hereby appropriated, out of any moneys in the Treasury not otherwise appropriated, the sum of one hundred thousand dollars.

DETERMINATION OF DEATH.

Occasionally the physician is called upon to determine whether a body supposed to be dead is really so, or only apparently so.

When the question does come, it brings with it a great responsibility, for the conscientious physician is compelled to admit that there is no single, certain sign of death, before putrefaction becomes apparent. It is upon this ground that the advocates of cremation have based some of their strongest arguments.

But while there is no single pathognomonic sign of death, a correct conclusion can hardly fail to be reached, in a given case, by the combination of conditions present.

The question usually arises because of some unusual condition about the corpse. The temperature of the body may remain high, rigor mortis may be absent, the lips may remain red, or some other unusual condition may be present.

The cessation of respiration and circulation must be regarded as proof of death. But in many cases of coma, these two functions are continued to so slight a degree as to be almost imperceptible. Persons asphyxiated by drowning, and infants asphyxiated during birth, have been resuscitated when all apparent signs of life had ceased for some time. TAYLOR (Medical Jurisprudence) relates the case of COL. TOWNSHEND, reported by CHEYNE, who could voluntarily produce a cessation of respiration and circulation to such a degree that neither act could be detected. Yet the longest period of this apparent death was one-half hour. In hybernating animals, the action of the heart can always be detected, although it is very slow, and very feeble. In cataleptic conditions, the feeble action of the heart can be detected by the stethoscope; moreover, the body remains warm. Rigor mortis can be differentiated from neurotic spasmodic conditions by the fact that it involves all the muscles. In cases of sudden death, or death from convulsive poisons, or coal gas, rigor mortis appears quickly and disappears quickly, so that when the body is examined, this sign may not be apparent.

The dead body ordinarily loses its heat quite rapidly, but this is not always the case; we have ourselves seen a temperature of 105° F. in the pericardial sac, two hours after death.

As to the color of the dead TAYLOR records two very interesting cases. One by SNOW, who was once called to see a young woman after she had been dead three days, and whose face had suddenly become so suffused and red, that her friends doubted the reality of her death. After a time, however, the color abated, and the commencement of putrefaction clearly proved that she was dead. TAYLOR himself once saw the cheeks of a corpse acquire a florid red color, between the third and fourth day after death, when rigidity had ceased.

With a careful consideration of all the conditions of death, even in the absence of any pathognomonic sign, it can hardly be supposed that a medical man could make a mistake in a case of this kind.

In another column will be found a communication from a correspondent upon this peculiar subject, which has been the occasion for these observations.

OLEOMARGARINE.

A paper upon this subject, from the pen of G. C. CALDWELL, B.S., Ph.D., Professor of Agricultural and Analytical Chemistry in Cornell University, appears in a late number of the *Medical News*.

This substance has become an important article of food, and its use is rapidly extending, so that it behooves physicians to acquaint themselves with its mode of manufacture, its dangers and its uses.

According to PROFESSOR CALDWELL, caul fat is first cooled, and washed, and then rendered at a temperature of 120° to 150° F. The clear fat is then run into wooden tanks, and the greater part of the stearine, the hard fat contained in it, allowed to crystallize out. The liquid fat separated from the stearine is called "oleo oil." A similar product, prepared from lard, is allowed to retain its stearine, and is known by the trade name of "neutral." The "oleo oil" and "neutral" are then mixed in certain proportions, and constitute "oleomargarine." This substance is free from flavor and color, and to become "butterine" is churned with milk or cream, by which a certain proportion of the flavoring elements of butter are mixed with it, and impart to it the taste and odor of natural butter.

Physicians are not concerned with the effect which the manufacture of this article may have upon the butter trade, but are deeply interested in the wholesomeness and the nutritive value of this product.

It may be stated at once, that it has not yet been shown to be a medium for the transmission of pathogenic germs, and there can be but little doubt but that it is much cleaner than the bulk of the butter put on the market.

Some laboratory experiments as to its digestibility have been made by DR. R. D. CLARK, chemist to the New York State Dairy Commissioner. DR. CLARK performed some emulsionizing experiments with different fats and pancreatic juice, and found that, next to cod-liver oil, butter gave the finest emulsion in twelve hours, while oleomargarine still had many large globules, left unchanged. DR. CLARK also proved that, while butter melts to a clear, limpid liquid in thirty-five minutes, at 100° F., oleomargarine was but slightly changed.

It must be admitted, however, that such experiments show very little, as they are far from imitating the processes of natural digestion. Experiments, however, made by Atwater and others, by Rubner, of Munich, and Mayer, of Germany, show that healthy individuals digest almost as great a percentage of oleomargarine as of butter, the difference, less than 2 per cent., being so slight as to be unimportant.

It may therefore be conceded that "butterine" is a clean product, very digestible, and not yet shown to be, either directly or indirectly, a cause of disease.

And yet its nutritive value is still to be shown. Its constituents are all natural foods, and no doubt perform their usual functions in the organism; but whether they perform the same functions, and subserve the same ends as natural butter does, is not yet known and should not be assumed.

Sterilized milk differs from raw milk only to a slight degree from a chemical standpoint, yet the nutritive values of these two substances are decidedly different. Fresh raw milk contains a something not yet separated by the chemist, but named by our English brethren the antiscorbutic element. This intangible element is missing in sterilized milk, and infants fed upon it are liable to develop "land scurvy" and to present other evidences of incomplete nutrition. This, indeed, is the great danger of sterilized milk, and is the one drawback which prevents its more prolonged use.

Butter is a food so extensively used that it can hardly be believed that its use has developed simply as a gratification to the palate, but rather because it adds something to the nutrition which the other fats used as foods do not. It is upon the line of nutritive sufficiency that substitutes for butter must be studied.

INTERNATIONAL CONGRESS OF GYNECOLOGY AND OBSTETRICS.

Under the above title, the first meeting of the gynecologists and obstetricians of the world will be held at Brussels, Sept. 13 to 19, 1892. It is proposed that the Congress shall assemble every four years, and it is to be hoped that the neutral ground selected as the first place of meeting, will secure an attendance from the various countries of Europe as well as America. Three questions are proposed for discussion at this first Congress:

1. Pelvic Suppurations, referee, Dr. A. Segond, of Paris.
2. Extra-uterine pregnancy, referee, Dr. A. Martin, of Berlin.
3. Placenta prævia, referee not yet named.

The secretary general of the Congress is Dr. Jacobs, of Brussels. The secretary for America is Dr. Fernand Henrotin, 353 La Salle Ave., Chicago. Dr. Henrotin is desirous of obtaining the names and addresses of the executive officers of all the gynecological and obstetrical societies of the United States, in order that he may forward to them promptly all official communications relating to the Congress.

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We are glad to be able to congratulate the officers of the Congress on their selection of an American secretary. The honor has been worthily bestowed. Having never been a writer, Dr. Henrotin and his work are unknown except to his personal acquaintances. These however, are well aware of his personal and professional worth, his mental breadth, his modesty, and his ability. He well represents what is best in American gynecology.

The New York Board of Health.—The appropriation of the City Board of Health of New York for 1892 amounts to $435,000. This is an increase over last year of about $15,000, but is an apparent decrease in current expenditure account, since $30,000 of the grant must be devoted to the erection of a new reception hospital.

Coffee.—Whereas, it has been asserted that the use of coffee promotes or causes lesions of the heart (commonly termed heart disease), members of the A. M. A. are hereby respectfully invited to contribute any information on the subject known to them, pro or con, so that, so far as is possible, this question may be settled for our organization.

Address E. Cutter, Secretary, 1730 Broadway, New York.

Railroad Rates for Medical Association Meeting.—If the Transportation Committee of the American Medical Association has not as yet made final arrangements for a reduced railroad rate for the June meeting at Detroit, we would suggest that the necessary steps be taken as early as practicable. Mr. L. S. Allen, Assistant General Passenger Agent of the Baltimore & Ohio Railroad, whose office is in "The Rookery," in this city, would take pleasure in urging a low rate in Central Traffic Association territory, and Mr. Chas. O. Scull, the General Passenger Agent of the B. & O., whose address is Baltimore, Md., would be equally pleased to arrange such matters among the eastern lines. The B. & O. officials have always displayed a most liberal spirit in their dealings with the Association, and have granted all concessions consistent with the policy of their company.

SELECTIONS.

Sir Andrew Clark's Method of Teaching Clinical Medicine.—Dr. Clark is known as most skilful physician and able teacher of medicine. In a recent lecture (*London Lancet*) he discusses the several methods followed by clinical teachers, and then describes his own. He says that "the criterion of true instruction is not *acquiring* but *thinking*. Genuine clinical teaching requires the active coöperation of teacher and student, the assimilation as well as the acquisition of knowledge; seeing, handling, doing as well as trying, failing and succeeding."

Dr. Clark's method is "to help his students to get plain, practical clinical instruction, and so to get it that they may pass from the hospital into practice accustomed to its methods and cautions, without fear of disaster, and ready for sound, honest work."

An unknown case is brought before him and his class, and he proceeds to deal with it as nearly as is possible in the same manner as he would in private practice.

He lays importance upon always following a definite plan of procedure; it may not be the best, but it is far better than no plan. He first asks the patient to tell the symptoms of which he complains, how long he has been ill, and in what way his illness began. Secondly, he endeavors to learn from the patient the number and nature of the troubles he has suffered in the course of his life. Thirdly, he makes the acquaintance of the medical history of the patient's family.

Having acquired this information and found the patient's statement points to the lungs as the chief seat of the malady, he investigates these organs with all the modern aids to diagnosis. This completed, he separately investigates the conditions of the circulatory, digestive, genito-urinary, cutaneous, and nervous systems. Thus he ascertains the manner and degree in which the constitution is being affected by the disorders or diseases which may have been brought to light..

Now he is able to state in order the symptoms and signs of the patient's disease, and the signs and symptoms of disorder of the disease which may exist casually or independently elsewhere than in the lungs. He is able to elicit their relations, to interpret their meaning, and to set forth their bearing upon the future course and complications of the case.

Now he can discuss the probable nature of the malady and frame the diagnosis. This done, he considers the probable future of the case, settles the report to be made to the friends, and finally determines the treatment to be pursued. From time to time the case is re-examined in order to correct or confirm the diagnosis, to determine the way in which the disease is going, and to consider the use or uselessness of remedies.

Dr. Clark assures his students that "if they adopt this plan, if they follow it step by step, if they follow it unintermittingly, and if they bring all their collateral knowledge to bear upon its development, they will be preserved from confusion in emergencies, they will acquire a growing interest in their work, their minds will have formed a precious habit, their whole nature be lifted up, and in due season their labors will yield fruit both abundant and good. Further, in the carrying on their work in this manner, they will have trained their understandings, disciplined their hearts, and exercised their wills to the utmost of their capacities. They will become cultivated men, and be able to hold their own on topics of mutual concern with the public in the gate, and they will be prepared to deal successfully with those problems of the moral life from which few cases of disease are entirely exempt."

We heartily congratulate Dr. Clark's students upon the rich instruction they receive at his hand. There are but few genuine teachers of medicine after his pattern, and those that are favored with their instruction should be doubly grateful.

All clinical teachers could not fail to do better work by the study of Dr. Clark's method. Unfortunately, very much of clinical teaching is designed to pilot patients into the consulting room of the teacher, and not for the education of the student, so that he may become an independent, wise, efficient physician. For such the methods pursued by Dr. Clark will have no attraction. Only for those who love to teach medicine so that their students may become physicians of the highest type will Dr. Clark's lesson come as a welcome gift.—*American Lancet.*

THE NEW HOSPITAL OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF MICHIGAN.—On January 20th this institution celebrated the completion of its new one-hundred-thousand-dollar hospital. From one to five P.M., its rooms were crowded with appreciative visitors. At 7 P.M., the dedicatory exercises were held in the large University Hall. These were attended by some fifteen hundred people. President Angell gave a sketch of the upbuilding of the hospital, and described the special advantages to the students and the citizens of the State. Of the one hundred thousand dollars, the little city of Ann Arbor contributed twenty-five thousand dollars for the erection of this new building. Hence it was fitting the Mayor, Mr. Doty, should speak of the relations of the City to the University. The Rt. Rev. Bishop Gillespie, as a member of the State Board of Charities and Correction, spoke of the good to come from the new hospital to the institutions under his care. Finally, the eloquent Dr. A. L. Gihon, of the U. S. Navy, spoke of the new hospital as related to medical education in general. Following these exercises, the Medical Faculty entertained a large number of invited guests at a reception in Newberry Hall.

During the two days previous the members of the Medical Faculty vied with each other in their lavish entertainment of visiting physicians, at breakfasts, lunches and dinners, exhibitions of their new hospital, and all matters relating to the medical department. The occasion was made to increase the esteem and popularity of this institution among all classes.

In this new hospital are housed both the homœopaths and the regular patients belonging to the two medical schools of the University. The new facilities thus furnished for the teaching of clinical medicine and surgery are a great improvement upon those hitherto enjoyed.—*American Lancet.*

TREATMENT OF PNEUMONIA.—Dr. G. W. Balfour (*Edinburgh Medical Journal*) says:

Whether, therefore, we hold old-fashioned or new-fashioned views as to the causation of pneumonia, the treatment of it by chloral would seem to be equally appropriate from a physician's point of view; while a patient cannot but regard as both agreeable and suitable a remedy which soothes pain, stops cough, and relieves insomnia. Chloral does all this, but it does more, it really seems to shorten the duration of the disease; or, as we may put it, to favor an early crisis. Having seen pneumonia treated in almost every imaginable manner, from large bleedings to colored water, I have no hesitation in saying that, so far as I am capable of judging, the treatment of pneumonia by chloral is that which gives the patient most relief from his sufferings, which more than any other favors an early crisis, and which appears to have no tendency to increase the mortality, if it does not indeed diminish it, which would be difficult to prove.

For reasons already given, I always give in pneumonia chloral—Liebreich's chloral, none other is safe—dissolved in infusion of digitalis. The dose of chloral and of digitalis must vary with the age of the patient. For an adult I prefer to give for a first dose twenty grains of chloral in half an ounce of infusion of digitalis, the subsequent dose being ten grains of chloral in half an ounce of infusion of digitalis every four hours, continued till the temperature falls to normal, then to be replaced by some appropriate tonic. After the first dose, if it be one of twenty grains, or after the second or third dose, if we begin with ten grains, the pain and cough cease, the patient dozes all day and sleeps soundly during the night; the glutinous sputa either cease entirely or become changed to a scanty mucous phlegm easily expectorated, the pulse drops, the temperature falls, the disease is arrested, and the patient gradually convalesces. A jacket poultice is a useful adjuvant, which may be, however, very advantageously replaced by a sheet of cotton wool. An appropriate diet cannot, of course, be dispensed with.—*American Lancet.*

RESTRICTED DIET VERSUS PREMATURE LABOR IN CONTRACTED PELVIS.—Dr. Prochownick has been discussing (*Brit. Med. Jour.*) the questionable procedure of inducing premature labor in cases of contracted pelvis, and reports three successful cases in which the necessity for premature delivery was averted by controlling the diet during gestation. The principle of the dietary consists in the restriction of the quantity of fats ingested and stored away by the mother or the fœtus, much upon the plan pursued in the treatment of obesity. The prohibited articles are chiefly fluids, sugar, and starch. This diet only slightly reduces the strength of the mother, and does not appear prejudicial to the child in the experience thus far reported. Dr. Prochownick considers that a thin child, born at full term, has a better chance of living than a plumper infant born prematurely. The exposure to air at the seventh month, and the subsequent artificial feeding, involve far greater risks than the proposed reduced nutrition during two month's longer residence in utero, and the golden admonition is recalled that that triumph only is perfect when the child as well as the mother is saved. The paper does not state what influence this course exerted upon the formation of the bones of the child's head and the effect upon their delivery. The narrowest conjugate diameter of the pelvis in three cases of successful delivery was 3.94 (nearly 4) inches.—*Arch. Gyn. Obs. and Ped.*

PASSAGE OF THE BACILLUS OF TUBERCULOSIS FROM THE MOTHER TO THE FŒTUS.—Birch-Hirschfield and Schmorl (*Beitrage zur Path. anat. und zur allg. Path.*, 1891, p. 429; *Brit. Med. Jour.*), have put on record a case which they claim is the first in which it has been definitely proved that in the human subject tubercle bacilli pass from the mother to the fœtus. The patient was a young woman who, shortly after the commencement of her first pregnancy began to show signs of phthisis: these gradually become more marked, and she succumbed at the seventh month of her pregnancy. Immediately after the death of the mother the fœtus was removed by Cæsarean section. The necropsy on the mother showed abundant evidence of phthisis; not only in the lungs, but in other organs, tuberculosis was detected. Although the fœtus had been alive shortly before the death of the mother, it was dead when it was removed. The chest was at once opened, but there was nothing noteworthy about the lungs. The fœtus was then taken to the laboratory, the surface of the abdomen was washed with perchloride of mercury, and the cavity was opened with sterilized knives. No tubercles could be seen on any of the organs. Minute pieces of the liver, the spleen, and the kidney were placed in the abdominal cavity of two guinea pigs and a rabbit with all antiseptic precautions. One of the guinea pigs died in fourteen days, and tubercles were found in different parts of the abdominal cavity. The second one was killed about six weeks after inoculation, as it was clearly ill, and many tubercles were found in the peritoneal cavity. The rabbit lived three months; on its death many tubercles were found in the liver and the lung. Tubercle bacilli were found in the umbilical cord and the blood of the umbilical vein.—*Arch. Gyn. Obs. and Ped.*

BORIC ACID, INTERNALLY, IN TYPHOID FEVER.—Dr. L. E. Keegan reports on 52 cases of typhoid fever in which he employed boric acid with success, internally, in doses (according to *Bull. Gén. de Thérap.*) of 10-20 grains [0.6-1.2 grams] every 4 hours. Tympanites and diarrhœa rapidly diminished, the tongue became moist and clear, and the general condition improved considerably. In two cases, it even appeared as if the disease had been aborted by this treatment.

The boric acid may be combined with other antiseptics, as in the following formula:

Boric Acid, ʒ (2 gms.)
Beta-Naphthol ʒ
Bismuth Salicylate ʒ
Salol ʒ

Dispense in 8 wafers!—One, 4 or 5 times daily.
—*Merck's Bulletin.*

QUADRUPLETS.—Dr. James A. Meek, of Bunker Hill. Ind., sends us the following interesting case (*Ind. Med. Jour.*): On the night of November 14, I was called to visit Mrs. ——, living three miles southwest of this place, in her fifth confinement. On arriving at half past nine o'clock I was informed by Dr. O. C. Irvin, of El Paso, Texas, who was visiting the family, and who is a brother-in-law of Mrs. ——, that the labor was over, and that four living girl babies were born, remarking that he did not think he had let any get away. For a time we had business giving attention to the mother and four little ones. They were all perfect and well formed, though small, not averaging over three pounds each. One of them died the next morning; the remaining three and mother are doing well. There was one placenta, and each child was enclosed in a separate sac.—*Med. Review,* St. Louis.

AMENORRHŒA OF SCHOOLGIRLS.—Dr. T. A. Reamy (*Cin. Lancet Clinic*), in discussing the amenorrhœa of anæmia, common to schoolgirls, says: (1) She must leave school, and must not even study at home. (2) She must spend several hours each day in the open air, either walking or riding. In winter she must of course be warmly clad; but must wear no sheepskins or other chest-protecting pads. Standing in the open air, she must be induced to breath deeply with the mouth closed; this should be done for at least fifteen or twenty minutes, and be repeated at least twice a day. Nothing that can be done will more rapidly improve the character of her blood. (3) She must sponge her extremities and body each morning on arising from bed. The water must be of the temperature of the room, and she must practice friction freely with an ordinary towel. (4) She must drink plenty of milk and eat plenty of beefsteak. (5) She must take small doses of iron, combined with some bitter tonic, three times a day. Improvement may be somewhat slow, but if this course is faithfully carried out a perfect cure will result, and her education may then be finished.

If this course or its equivalent be not followed, these cases will go from bad to worse, and finally die of pulmonary tuberculosis.—*Arch. Gyn. Obs. and Ped.*

PELVIC INFLAMMATION IN WOMEN—A PATHOLOGICAL STUDY.—Dr. W. W. Potter, of Buffalo, read a paper with this title before the Mississippi Valley Medical Association at its recent meeting at St. Louis.

The author affirmed that pelvic inflammations and their residues constitute about one-third the diseases the gynecologist treats, hence the importance of frequent discussions of all moot questions relating to the subject. He briefly reviewed the anatomical relations of the pelvic organs, calling attention to their enormous blood and nerve supply, which became both their weakness and their strength. He contrasted the pathology of Bennet (1843) with that of Emmet (1873), and the latter with the teachings of Tait, Price, Hegar, and McMurtry of the present age. He referred to the pathological studies of Bernutz and Goupil of thirty years ago, and affirmed that the observations of the present had served to confirm the correctness of these pioneers.

He next asserted that the pathology of to-day had been established by operative surgery, which had shown that pelvic inflammation begins in the tubes or ovaries and extends to adjacent structures through absorption or by contiguity; that it almost never begins in the cellular tissue, but may be carried there through the tubes and ovaries by infections, either specific, puerperal, or traumatic. He affirmed that the inflammation was in most cases a peritonitis, intrapelvic or local in character, and not a cellulitis; that para- and peri-metritis were misleading and confusing terms, hence should be dropped; and that the so-called pelvic abscess was a sequence of salpingitis, ovaritis, or peritonitis, not a primitive accumulation in the areolar tissue itself.

The tentative management in these cases, rest, counter-irritation, hot sitz baths, vaginal douches, and attention to the digestive organs and general health, resulted in only temporary improvement, or in cure in a very small percentage. Those reported cured were generally, if the history could be known, subject to repeated relapses; and a frequently recurring pelvic peritonitis usually indicated leaky tubes. Electricity, too, had disappointed its most sanguine advocates and need not be considered.

In conclusion, he asserted that if these views be accepted, the logical deduction was to watch the early manifestations of the disease carefully, that competent surgical skill be invoked before the damage to important structures became too great to justify the expectation of successful operation. —*Arch. Gyn. Obs. and Ped.*

Disinfection in Great Cities.—The Paris Municipality has recently provided three disinfecting ovens where the public can have bed-clothes, wearing apparel, etc., disinfected free of charge on applying at any *mairie*, cemetery, or municipal ambulance station. Medical practitioners are supplied by the authorities with packets of postcards, the despatch of one of which will cause steps to be taken with the least possible delay for the carrying out of any required disinfection. A special conveyance, hermetically closed and under the care of attendants wearing a distinctive uniform, is sent to the house indicated. After disinfection the things are brought back in a different vehicle.

Perforation of Uterus by Sound, and Fatal Sublimate Poisoning.—Dr. Gebhard (*Nouvelle Arch. d'Obstét. et de Gynéc.*, August, 1891; *British Medical Journal*) recently observed a patient who had been under treatment from November 5, 1890, for gonorrhœa. A 1–5000 sublimate solution was thrown up, by means of a Bozeman's sound, at intervals of a day or two, in the out-patient room. On the third occasion, November 11, immediately after the introduction of the sound, the patient complained of pain. After nearly a pint of solution had been thrown up, the pain increasing, the injection was suspended. Vomiting and faintness came on rapidly. Perforation of the uterus and entrance of the solution into the peritoneal cavity was diagnosed. An opium suppository was administered. Dysenteric diarrhœa followed in a few hours. On the next day complete anuria set in. Mucus was continuously discharged from the rectum, which protruded and was ulcerated. Stomatitis, with a trifling amount of salivation, began on the third day. The patient died on the eighth day. Acetate of potash was given to promote diuresis, but completely failed in its object; pilocarpin caused profuse concentrated perspiration, which exhausted the patient and irritated her skin. Opium had been suspended early in the course of the case, Dr. Gebhard believing that it was contraindicated in dysentery. At the necropsy, two complete perforations of the fundus uteri were found, lying close together, near the right tube. The peritoneum was inflamed; the entire large intestine and 4 inches of the ileum were ulcerated and in parts sloughy. One ulcer had perforated the sigmoid flexure. In the tubuli uriniferi were found cretaceous deposits of the kind described as occurring in the kidneys of patients dead from mercurial poisoning. Dr. Gebhard dwells at length on the pathology of this condition. It appears certain that stomatitis and salivation, which follow so sharply on an overdose of mercury by inunction or friction, are not the first symptoms in poisoning by mercurial injections used after childbirth. In that case diarrhœa is the earliest sign, and it rapidly becomes mucous, sanious, and ultimately fetid. It represents gangrenous dysentery. The next symptom is a marked diminution in the excretion of urine, often ending in entire suppression. Stomatitis follows third, and may be severe, but salivation is not constant, even in fatal cases. The temperature is subnormal. In the case above related, where there was acute traumatic peritonitis at the beginning, the temperature was high for a few days, but fell below normal when the symptoms of poisoning began to predominate. Erythema is rare.—*Arch. Gynecology, Obstetrics and Pediatrics.*

Tubo-Ovarian Disease, *Ichthyol in.*—At a meeting of the Turin Academy of Medicine, on June 12, Dr. Albertoletti reported (*Riformo Medica*) the results of an extended trial of ichthyol made by him in the Maria Victoria Hospital on a number of women suffering from salpingo-ovaritis, endo-, peri-, and para-metritis, etc. He used almost exclusively the sulpho-ichthyolate of ammonium, which he gave internally in pills, or by inunction in the form of pomade, or by intra-uterine injection. He sums up the results obtained as follows: Resolution in the relatively short space of time of endometritis in cases which had proved refractory to the most active treatment; absorption (not always complete, however) of peri- and para-metritic exudations; cessation of pain in every case without exception. The remedy, according to Dr. Albertoletti, has this marked advantage over other remedies, that while at least equally efficacious, it is perfectly well borne in all cases, and can therefore be used when other forms of medication are inadmissible. Dr. Bergesio, in discussing the paper, confirmed Dr. Albertoletti's conclusions in every particular, and said that ichthyol seemed to be destined to solve many therapeutic problems relative to utero-ovarian disease.—*Archi. Gyn. Obs. and Ped.*

Instillations of Nitrate of Silver in the Treatment of Epididymitis.—Dr. Samuel Alexander calls attention to the value of instillations of nitrate of silver in the posterior urethra to prevent recurrence of the epididymitis, and to hasten the course of the original disease. He does not claim originality in this method, which he ascribes to Diday, but insists on its beneficial effects. His plan is to commence as soon as possible with the instillations. The patient is placed in bed, given a subcutaneous injection of morphine if the symptoms are very acute, and then with a Keyes' modification of the Ultzmann syringe an injection is given just within the membranous urethra. The strength of the solution should vary from 1 gr. to the ounce, if the symptoms are very acute, to 8 gr. to the ounce, and the injection must be repeated at intervals of 24 to 48 hours. During this treatment the testicle should be supported and poulticed with flaxseed. Later, the dry dressing of cotton wool, vaseline, and rubber tissue covering should be employed. The injections should be made soon after the patient has passed his water, so that there may be as little secretion as possible in the urethra. The advantages as summed up by Dr. Alexander are: (1) The lessened liability to a relapse. (2) The shorter course of the disease. (3) The shortening of the duration of the accompanying urethritis, because treatment of the posterior urethra is continued during the existence of the epididymitis.—*Journal Cutaneous and Genito-Urinary Diseases.*

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The subject of vaccination is one to which the average physician pays but little attention. He, in general, believes that the prophylactic influence of vaccination over small-pox is as well established as is the usefulness of our fire departments, but if suddenly called upon to defend such belief, he might find it exceedingly difficult to acquit himself with credit. It might be supposed that one hundred years would be a sufficient time in which to settle this question beyond peradventure, and that its discussion would long ago have ceased. But it must be remembered that the fact of the circulation of the blood was denied by a majority of the medical profession in Spain, one hundred and fifty years after Harvey proved it; that even so great a man as Lord Bacon rejected the Copernican system nearly one hundred years after its publication. It should not, therefore, seem strange if we are able to find among the ignorant and clamorous declaimers against vaccination to be found in every community a few whose scientific attainments entitle their opinions to respectful consideration. Inasmuch, therefore, as we do find that the utility of vaccination is called in question by some belonging to this latter class, I have thought that it would not be inopportune at this time to take a review of the grounds upon which our opinions are based.

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Medical science does not disdain to receive information from any source, however mean. Thus it has transpired that valuable hints have been received from Jesuit priests, barbers, itinerant quacks, slaves, Indians, and even the wild bison of our western plains has contributed to our surgical knowledge. So in this instance, Dr. Jenner was led to his studies by the traditions of the cowherds and dairymaids. During the last half of the eighteenth century it was matter of common comment among the farmers of certain dairy districts in England, that those persons who had suffered from cow-pox did not contract small-pox. Mr. Nash, writing in 1781, said that he had never heard of any one having the small-pox who had ever had the cow-pox. He had inoculated sixty persons reported to have had cow-pox; of these forty were unsuccessful and twenty successful. He had reason, however, to believe that these had not really had cow-pox. Mr. Rolph had met with similar experience, and his partner, Mr. Grove, who had been an extensive inoculator, frequently having two hundred or three hundred patients at one time, by his experience with many scores of subjects who had previously labored under the cow-pox, established their insusceptibility of the small-pox, either by inoculation or effluvia. A farmer by the name of Nash, being impressed with the traditional belief, was courageous enough to act upon it, and intentionally inoculate himself with the disease. Benjamin Jesty, a farmer of Downshay, on the isle of Purbeck, having had the casual cow-pox himself, vaccinated his wife and two sons, Robert and Benjamin, in 1774. They were all afterwards inoculated with small-pox virus and exposed to the disease by contagion, but without effect. In 1805, Jesty visited London at the invitation of the Original Vaccine Pock Institution, and there at the age of seventy years publicly submitted to the operation of inoculation with small-pox virus and afterwards with cow-pox virus, in both instances without developments. Mrs. Catherine Wilkins Titchenor, of Wiltshire, voluntarily submitted to inoculation for small-pox at the hands of Dr. Archer, in 1781, to demonstrate to her brother that she, having had cow-pox, was proof against small-pox, and the operation sustained her claim. It is said that a school teacher in Holstein in 1791, inoculated three boys with the virus of cow-pox but no details of the cases are on record.

But traditions of this sort were by no means confined to the dairy districts of England. On the contrary (Good's Study of Medicine, vol. i, p. 612; 6th Amer. Ed.) the same belief prevailed in the country districts in France, Spain, Norway and Germany, and Humboldt in his work on New Spain adduces evidence which would indicate that the inhabitants of the Andes were long in possession of similar knowledge. It will thus be seen that observations tending in the same direction were made at numerous and widely separated places.

Although observations and traditions of this kind were thus widespread in the latter years of the last century, this fact should detract nothing from the credit due to Dr. Jenner as the first to introduce the fact to the active attention of the scientific world. Edward Jenner, who had been a pupil in London of the great Scotch Pathologist, John Hunter, was an humble practitioner of medicine at Berkeley, in the county of Gloucester, England. He there became acquainted with the traditions current among the cowherds and dairymaids, and determined to investigate the subject. He undertook to ascertain, if possible, the origin of the disease in the cow, and believed that he had done so, but this subject will be adverted to later on. Having observed a large number of cases of the casual cow-pox and noted their subsequent immunity from small-pox, the next important step to be taken in this, to him, exceedingly interesting investigation, was to ascertain whether the cow-pox could be transmitted by inoculation from one human being to another, and if it could be thus transmitted whether it retained it protecting power. It was a long time before an opportunity presented itself to him of making this experiment, but at length it came, and on May 14, 1796, he vaccinated his first subject with matter taken from the hand of one Sarah Nelmes.

He watched this case with great care and anxiety, and first detailed the history of the case to his friend Gardner, to whom he wrote as follows on July 19, 1796: "A boy of the name of Phipps was inoculated in the arm from a pustule on the hand of a young woman who was infected by her master's cows. Having never seen the disease but in its casual way before, that is, when communicated from the cow t the hand of the milker, I was astonished at the clos resemblence of the pustules, in some of their stage to the variolous pustules. But now listen to th most delightful part of my story. The boy has sinc been inoculated for the small-pox, which as I ventured to predict, produced no effect. I shall no pursue my experiments with redoubled ardor."

During the year he encountered other cases of failure of small-pox inoculation in those who had ha cow-pox and believed that he now had materials fo a paper which he was ambitious to have appear i "The Transactions of the Royal Society."

He at once began writing his paper on "The Cause and Effects of Variolæ Vaccinæ." This inquiry which was somewhat hurriedly written, was presente to the Royal Society but was rejected. In this pape Jenner detailed, besides the case of the boy Phipps the following ten cases of casual small-pox :—

	Had Cow-pox.	Inoculated for Small-pox.	Result.	Exposed to Small-pox by Infection.	Result.
1.	1770	1795	Unsuccessful.	In family.	No indi positio
2.	1765	1792		Nursed children.	
3.	At age 9 years.	At age of 62.	"	Not stated.	
4.	1760	1791	"	Repeatedly employed as small-pox nurse.	"
5.	When very young.	1778	"	Visited a relative sick with small-pox.	"
6.	1796	1797	"	Not stated.	
7.	1796	1797	"	" "	
8.	1759	1792	"	" "	
9.	1780	1795	"	Assisted nursing small-pox cases.	"
10.	1782	Some yrs. later.	"	Repeatedly exposed.	"

And the conclusion which he reached was "bu what renders the cow-pox virus so extremely singula is that the person who has been thus effected is forever after secure from the infection of small-pox neither exposure to the variolous effluvia nor th insertion of the matter into the skin producing thi distemper."

Two years later, that is in 1798, he rewrote hi Inquiry, adding considerable new material, and ha the same published. This publication produced a great stir in the medical profession. No sooner did Jenner's conclusions become public property tha opposition to them began to appear on every hand. Dr. Ingenhousz, one of the most prominent physicians in London, was one of the first to question the utility of the new operation. Mr. John Birch, surgeon to His Royal Highness, the Prince of Wales, was another who particularly distinguished himself as an opponent of vaccination. He published in 1806 an extensive document in which he set forth his reasons for objecting to the operation. This was in answer to "The Report of the Jennerian Society." He was a surgeon and an extensive inoculator, and all through his paper the two operations are contrasted to the advantage of inoculation. Moreover, he was specially exasperated because when the committee of the House of Commons were investigating the subject they did not consult the College of Surgeons, whereas, they did consult the College of Physicians and the apothecaries. He wrote at a time when the balance of opinion among the masses was decidedly in favor of the new procedure, but so thoroughly convinced was he of its inefficacy that the language of his paper is not specially conspicuous for temperateness, and he ventured the prediction that the popular opinion favorable to vaccination, then in the ascendant, would very soon "vanish into thin air."

In 1799 cow-pox made its appearance in the dairies of London, a circumstance which greatly aided the experiment. Drs. Pearson and Woodville, who were extensive inoculators in London, procured supplies of this virus and immediately began vaccinating on a large scale. The operations of these gentlemen constituted a very important epoch in the history of vaccination. They reported about 500 cases with one death in a very short time, and the uniform immunity of these persons from small-pox did a great deal to establish the operation on a firm basis. In March, 1799, Dr. Pearson sent supplies of this virus to numerous practitioners in England, requesting them to use and report results. He soon afterwards sent supplies of vaccine virus to Paris, Berlin, Vienna, Geneva, also to Hanover, Portugal and America. In Germany the first vaccination was performed by Hugo von Wreden, in Hanover, then under English rule. In 1799, Surgeon Christian Frederick Stromeyer, who was educated in England, began vaccinating and induced the court physician, Dr. Georg Fr. Ballhorn, to translate Jenner's work into German. The next year (1800) these gentlemen were able to report on 1,000 cases of vaccination.

Ferro, in 1799, was the first to perform the operation in Austria, using one of his own children as a subject. Dr. Jean De Carron, of Geneva, then in Vienna, also operated in the same year.

In the year 1800, Heim established a Jennerian society in the city of Berlin, and did an extensive business. In France vaccination was promoted by Pinel and Thouret, of Paris, in Holland by Dr. Ludwig H. J. Demanet, of Ghent, in Italy by Aloysio Sacco, professor of medicine and surgery in Milan, in Denmark by Heinrich Callisen, in Spain by Amar, Gil and Salva. Dr. Benjamin Waterhouse, of Boston, professor of practice of medicine in Harvard college, vaccinated four of his children in July, 1800, having procured his virus from Haygarth, of Bath, England. Dr. Waterhouse has generally been conceded to have been the first to perform the operation in America, but at the meeting of the American Medical Association in 1874 (Transactions, vol. xxv, p. 59) Dr. Brodie, of Detroit, presented to the society a pamphlet showing that Dr. Valentine Seaman was the first to introduce the operation of vaccination into this country. The pamphlet was accompanied by the lancet with which the first vaccination was made. During the summer of 1800 Dr. Crawford, of Baltimore, performed the operation with virus received from Dr. J. Ring, of London.

The clergy rendered effective service in inducing the people to be vaccinated; this was particularly the case in Germany. The Dowager Empress of Russia became a patron of vaccination, and thereby greatly aided its introduction into that country. In 1800, Joseph Marshall and John Walker made a tour teaching and practicing vaccination; they stopped at Gibraltar, Minorca, Malta, Palermo, and Naples.

Marshall wrote to Jenner that at Palermo it was "not unusual to see, in the mornings of the public inoculation at the hospital, a procession of men, women and children, conducted through the streets by a priest carrying a cross, come to be inoculated."

Dr. Balmis was largely instrumental in establishing the practice in various parts of Spain as well as Spanish America, and in Spain's Asiatic dominions, also in the Canary Islands, Porto Rico, Caracas, Lima, Chili, Charcas, Havana, Yucatan, Gautemala, Acapulco, the Philippine Islands, Macao, Canton and St. Helena. The British Ambassador took vaccine virus from the National Vaccine Establishment to Persia, and from Vienna De Carro sent supplies to Constantinople and thence to Bombay.

The old practice of small-pox inoculation, though about extinct in civilized countries, has been continued even to the present time in some parts of the world.

This is the case in Burmah, where it has held its own until quite recently, although it is said that in certain parts of the country the mortality from the inoculated disease has averaged for long periods 8 per cent. When the English occupied this country a few years ago they endeavored to substitute the operation of vaccination for that of inoculation, but not with entire success. In the little village of Khramaung (*Lancet*, vol. i, 1891, p. 625) a number of persons were last year vaccinated. Their faith in the efficacy of the operation was, however, very limited, and they accordingly sent for the Sayas to inoculate them with small-pox virus. This operation was unsuccessful in every case, notwithstanding the fact that in each instance it was repeated three or four times. These were regarded as in the nature of test cases and the facts appealed to the understanding of the villagers, ruined the reputation of the Sayas, and "induced the headmen for a considerable distance around Sandoway to make earnest appeals to the civil surgeon to send vaccinators to their villages."

A very interesting item in the early history of vaccination is afforded in the experience of six black children who were vaccinated in 1804, and who furnished the stock from which 5,000 of the inhabitants of the island of Réunion were vaccinated. These children were shipped on board the vessel "Jeune Caroline," bound for one of the Seychelles Islands to perform quarantine for small-pox. These children were exposed on this vessel constantly, for a period of three months, to the disease, by infection and contagion. They slept under the same blankets with the sick, and in contact with their pustules, and they were inoculated on the arms with matter taken from these pustules, yet nevertheless they remained during all that time in a state of perfect health. There were on board this vessel at that time twenty blacks suffering from confluent small-pox, of whom six died. There were also between twenty and twenty-five others with dry crusts all over their bodies, and of whom seven died—and all these were packed into a small space between the decks of this vessel. The immunity from the disease enjoyed by these children is a striking example of the prophylactic power of vaccination, for they were submitted to the crucial test of inoculation and repeated and prolonged exposure to the effluvia of the disease.

It thus resulted that within a very few years after the publication of Jenner's "Inquiry" in 1798, vaccination was known and practiced throughout the civilized world. Though violently assailed at the very first, being denounced as not only foolish, but unnatural and impious, to engraft the disease of a brute upon a Christian, nevertheless the popular belief in its prophylactic power was soon firmly established. And the evidence soon accumulated by physicians from all countries soon established its position in the medical world, although no satisfactory solution was found to the question as to the how or the why.

The mortality resulting from small-pox inoculation was always considerable; in fact, so large as always to be a more or less serious barrier against its universal practice. When, therefore, the operation of vaccination was proposed as a substitute, and the people were assured that the disease could not by its *effluvia give rise to either cow-pox or small-pox*, they were prepared to tolerate a certain percentage of mortality resulting therefrom, though Jenner at first thought that death could never result directly from the operation. The early history of vaccination is marked by numerous experiments, inoculating individuals with matter from the sore heels of horses, etc., and there is no doubt whatever that some of these cases resulted fatally from septic infection, and the death was attributed to the action of vaccine virus.

Vaccination having established itself on firm grounds, and it being recognized that people, with the very best intentions and liveliest belief in the prophylactic power of the operation, will quite generally delay its performance until danger threatens, the subject early became matter for legislative action. Compulsory vaccination was first adopted in Germany, in Bavaria and the Grand Duchy of Hesse in 1807, in Baden in 1815, in Würtemburg in 1818, and in 1829 revaccination was required of recruits in the army. Compulsory laws were also passed by Denmark in 1810, Sweden 1814, Prussia 1835, Roumania 1874, Hungary 1876, Servia 1881. In ten of the twenty-two Swiss cantons it is also compulsory. The different laws in force in the German States and Principalities were merged in the general law of 1874 of the German Empire. In England a vaccination law was passed in 1857, in South Australia in 1872, Victoria 1874, Western Australia 1878, Tasmania 1882, Calcutta 1880, and since that in eighty other towns of Bengal.

In Egypt and its dependencies vaccination was made compulsory on December 17, 1890. The law requiring that the operation be performed by the end of the third month, except in case of sickness, when it may be postponed upon a physician's certificate.

In Manitoba a vaccination law was enacted and published in 1885. It is there provided that the poor may be vaccinated at public expense; that the operation must be performed in the first three months of life; that a certificate must be obtained of successful vaccination, or a certificate for delay or insusceptibility. Penalties and cumulative penalties are imposed for non-compliance with the law within the required period. Teachers are required to enforce the law, and are liable to penalties for neglecting to do so. In Japan vaccination was practiced to a very limited degree twenty-five years ago, at which time a large proportion of the population were pock-marked, but in 1874, and again in 1885, compulsory laws were enacted which require that not only those who have been unsuccessfully, but those successfully vaccinated, shall be revaccinated within a period of between five and seven years after the first operation. It is recommended that in case of epidemics of small-pox, all shall be revaccinated, no matter how recently the operation had been successfully performed.

A movement is now on foot to make vaccination compulsory in China. In Italy a law was recently passed, which went into effect January 1, 1892, which requires that every child be vaccinated within the first six months of life. Heretofore the only efforts in this direction in Italy have been as regards soldiers and other persons in the employ of the State.

Revaccination was made obligatory in Denmark in 1871, in Roumania in 1872. In Belgium there is no compulsory law, and no disability or prohibition laid upon the unvaccinated.

In France, Spain, Portugal, Norway, Austria and Turkey, there are no compulsory laws, except as regards soldiers and other State employés, but unvaccinated children, in many instances, are refused admission to the public schools and some of the private schools.

Although there have been compulsory laws on the statute books of some countries for many years, in one instance since 1807, it has happened, as we often see with other laws nearer home, that they have been executed with a very lax hand—in fact, have fallen into "desuetude," if not "innocuous," and the result has been that only a comparatively small proportion of the people have taken advantage of the protection against small-pox afforded by the operation. This fact was abundantly demonstrated in 1871–1873, when a very destructive epidemic of small-pox swept over Europe. Since that time the laws have been very vigorously enforced in the German Empire and in Great Britain, though even in these countries there are many who neglect to comply with the law now.

In this country we have no compulsory vaccination laws, but an effort in this direction is made in many States by the enactment of compulsory education laws and excluding unvaccinated children from the schools.

It is not alone those who do not believe in the prophylactic influence of vaccination who neglect its performance, but even those who are most alive to its importance will neglect it until small-pox appears in their neighborhood, when there is a very general demand for the operation. So true is this, that when a small-pox scare occurs, the demands for vaccine virus are so great that the propagators are utterly unable to supply them, and every animal is made to yield the largest possible quantity of virus. This was the case in 1882, and again in 1885. It thus happens that, at such times, very much of the lymph used is spurious, producing an atypical vesicle, leaving an atypical scar, and affording little, if any, protection against small-pox.

When we stop to consider what a large number of people are vaccinated who do not have typical vesicles or good scars, it is easily understood how the mortality is so great as it is among the vaccinated. Nor is this the fault of the physician, for my experience and that of many of my professional friends is that the people, in a very large proportion of cases, never report to the vaccinator after the operation, so that he is entirely ignorant as to its results, and they, presuming that it has been successful, feel that they are protected against small-pox, and often expose themselves to the disease, only to contract it, and thereafter to advertise themselves as living examples of the futility of the operation.

ITS PATHOLOGY.

In the first paper published by Dr. Jenner on variolæ vaccinæ, he did not neglect a consideration of the subject of its pathology. We find upon the first page of the "Inquiry": "In this Dairy Country a great many Cows are kept, and the office of milking is performed indiscriminately by Men and Maid Servants. One of the former having been appointed to apply dressings to the heels of a horse affected with *the Grease*, and not paying due attention to cleanliness, incautiously bears his part in milking the Cows, with some particles of the infectious matter adhering to his fingers. When this is the case, it commonly happens that a disease is communicated to the Cows, and from the Cows to the Dairy-maids, which spreads throughout the farm until most of the cattle and domestics feel its unpleasant consequences. This disease has obtained the name of the Cow Pox."

He performed some experiments with a view to proving the truth of this supposition. Thomas Virgoe, having been infected from a mare's heel, furnished matter from a pustule on his hand, with which Jenner inoculated a boy named John Baker, 5 years old, in March, 1798. This boy died soon afterwards, possibly from the septic effects of the inoculation. Jenner later continued these experiments, inoculating a cow with matter from a horse's sore heel; with virus thus obtained he continued arm to arm vaccination for five or six generations, when the stock was lost. Several of the subjects thus vaccinated were afterwards submitted to small-pox inoculation, but without success. Other experimenters soon continued the investigations initiated by Jenner. Conspicuous among these was Dr. John G. Loy, who in the year 1801 published "An Account of some Experiments on the Origin of Cow Pox." Proceeding on the horse grease theory, he inoculated cows with matter from the sore heels of horses, reporting which experiments he said: "In the manner of inoculation we have imitated exactly the process by which Dr. Jenner supposes the genuine Cow Pox to be produced. But it was not till after several trials that I was convinced the infection of the Grease could be made to operate upon the Cow without having been previously made to pass the action of the human system; for I made several unsuccessful attempts to produce any appearance of the Cow Pox by the application of Grease matter as obtained directly from the heels of the horse. Matter taken from three different horses in Grease, and at different times of the disease, did not produce, when inserted into the teats or udder of the cow, the least appearance of the Cow Pox."

At length, however, he met with a horse from whose heels he procured matter, in a more limpid state, with which he inoculated a cow, thereby producing a vesicle "containing a large quantity of watery fluid of purplish tinge." With this material he inoculated a child, producing a vesicle. This child was afterwards unsuccessfully inoculated with small-pox virus. From these experiments Dr. Loy concluded that there must be two kinds of horse grease, "differing from each other in the power of giving disease to the human or brute animal. . . . The horses that communicated the infection to their dressers were affected with a general as well as topical disease." In fact, at that time the diseases of the horse were not as well understood as at present, and thus two diseases were then confounded. The grease is a local disease of the horse's heel, being an inflammation of the sebaceous glands in and about this locality. It may be caused by sudden changes from heat to cold, or *vice versa*, and hence may result from washing the legs with hot water, and allowing them to dry by evaporation. It may also result from neglecting to dry the parts after unusual exertion. When grease becomes chronic, the affected part is infested by numerous acari, the *sarcoptes hippopodus*. On the other hand, horse pox is a disease affecting the general system, there is fever and evident indisposition, which is ameliorated when the generalized skin eruption appears, and this eruption is usually plentiful about the horse's heels. This disease, then, is the *grease* to which Jenner attributed the origin of the cow-pox. This theory of the origin of cow-pox was never very generally received by the medical profession, but recent investigations of Fleming in England, and Prof. Peuch of Toulon, France, appear to lend strength to this view.

The most natural theory would be, that inasmuch as vaccination confers immunity from a subsequent attack of small-pox, it must be a variolous affection of the cow, or as Jenner called it, variolæ vaccinæ; that is, cow small-pox.

Experiments were early performed with a view to determining the tenability of this theory. In 1828 the cow was successfully variolated by several physicians in Egypt, and children were vaccinated with virus from this source. Since that time very many repetitions of these experiments have been made, by Sunderland, Ceeley, Badcock and others. In many instances, to be sure, the persons vaccinated with virus taken from the variolated cow have had small-pox as a result. This was the case in a number of instances in the Confederate Army during the late war. A recent experiment of this kind was performed by a Dr. Meyer, of Monee, Ill., in 1880 (*Chicago Medical Journal and Examiner*, 1881, p. 481). Having variolated a heifer, he used the resulting virus in vaccinating a number of patients, most of whom contracted a mild form of small-pox as a consequence, but a few developed a more severe form of the disease. The animus thereby created in the village against the doctor, was such as to induce him to "fold his tent like the Arab, and as silently steal away." These experiments, and hundreds of others of a similar character, have been received by a large portion of the medical profession as indicating conclusively that cow-pox is, in reality, cow small-pox, a disease mitigated by transmission through the cow, and hence its prophylactic influence over small-pox. This is the doctrine taught in the majority of our text-books at the present time, notwithstanding the conclusion of the Lyons Commission that they are two distinct diseases.

Mr. John Birch, already referred to, did not believe that cow-pox was conveyed to the cow from the heels of the horse, but suggested that it might be communicated to the cow by the hands of a milker suffering from the itch. Auzias-Turenne, in a communication to the Academy of Medicine, Paris, in 1865, called attention to the analogy between cow-pox and syphilis; that there is in early removes from the cow, the formation of a papule, a vesicle, an ulcer with surrounding induration, enlargement of the lymphatic glands, and secondary eruptions or vaccinides.

There are those, even, who claim that the cow originally contracted the disease from the hands of milkers suffering from syphilis, notwithstanding the fact that the cow has been shown to be unsusceptible to this disease. This claim has, I believe, never been advanced by any one of scientific standing.

Prof. Crookshank, who is at present probably the most considerable opponent of vaccination, arrives at conclusions which may be briefly stated as follows: 1. Small-pox and cow-pox are radically dissimilar diseases. 2. It is not possible to protect from one disease by the artificial induction of a radically dissimilar disease. 3. Therefore, cow-pox does not protect against small-pox.

A large portion of the first volume of his recent work on the "History and Pathology of Vaccination" is taken up with material from which he deduces his conclusion that cow-pox and small-pox are radically dissimilar diseases. This material is as follows: The experience of inoculators was that matter from a case of confluent small-pox was very likely to cause the disease in a severe form, while from a mild case a still milder form of the disease would result. Adams, an extensive inoculator, acting on this knowledge, succeeded, by inoculating from very mild cases and continuing the process from arm to arm, in producing an inoculated disease so mild as to raise the suspicion that the virus of cow-pox had been used, there being no secondary eruption and the disease being no longer infectious. Guillon later also succeeded in producing vesicles with all the characteristics of a vaccine vesicle by cultivation from small-pox. Dr. Thiele, of Kasan, in 1839, met with the same results.

In 1828, Dr. McMichael reported that several Egyptian physicians had succeeded in variolating cows, and from that source had raised a stock of vaccine lymph. In 1830, Dr. Sonderland, of Barmen, variolated several cows by infection, and with matter thus produced succeeded in producing the typical vaccine disease. In 1839, Ceeley inoculated a large number of cows with variolous matter, and in several instances with success; with virus thus secured he began vaccinating and produced typical vaccine vesicles, continuing the stock. Badcock, of Brighton, in 1840, also succeeded in variolating the cow, and from the pustules thus resulting derived a stock of vaccine matter which produced typical results. Other experiments of this kind were not as happy, many cases of small-pox resulting from vaccinations with lymph from the variolated cow. Cattle plague is a disease which is closely analogous to small-pox in man, and is thus described: "The disease among horned cattle is an eruptive fever of the variolous kind; it bears all the characteristic symptoms, crisis and event of the small-pox, and whether received by contagion or by inoculation, has the same appearance, stages, and determination, except more favorable by inoculation, and with this distinctive and decisive property, that a beast once having had the sickness, naturally or artificially, never has it a second time."

It is an exceedingly fatal disease among animals, and, as Dr. Murchison has shown, is closely analogous to small-pox in man.

Mr. Macpherson, Superintendent of Vaccination at Moorshedabad, India, in 1832 selected matter from a mild case of this disease and vaccinated a number of children, in one case producing a typical vaccine vesicle. The symptomatic fever in this case was rather more severe than usual. From this child others were vaccinated with success and a new stock of vaccine lymph thus secured. In order to assure himself that "true cow-pox" had been introduced, a number of these children were afterward inoculated with small-pox virus and exposed to it by infection and contagion, but without taking the disease. The stock thus raised was extensively used in India.

Mr. Furnell, in Assam, repeated the experiment of Macpherson in 1834. With the assistance of Mr. Brown he inoculated several native children from a cow recovering from cattle plague, and then propagated the virus from arm to arm. An officer's baby was vaccinated in November with this virus, but developed a disease in all respects similar to small-pox. Mr. Furnell vaccinated his own child from a child vaccinated on the same day on which the patient was vaccinated which furnished virus for the officer's baby and from the same source; his child developed a disease in all respects similar to small-pox in its confluent form and died. Other similar cases occurred.

Mr. Hancock, of Uxbridge, England, in December, 1865, in conducting an autopsy of a bullock recently dead of cattle plague wounded his hand, and there developed at the site of the wound a typical cow-pox vesicle, although he had been successfully vaccinated in infancy. Sacco and Dr. Legni in Italy in 1802 encountered sheep-pox, and with virus from that source vaccinated a number of children, producing vesicles which in every way advanced as is usual with cow-pox. Legni propagated this virus from arm to arm for years, and saw the children so vaccinated exempt from small-pox during a three years' visitation of the disease at Pesaro.

Prof. Heydeck, in Spain, experimented in 1803 with goat-pox, and speaks of vaccinating the children in a foundling house with virus from this source, which "did its effects." There are no details of these experiments. Jenner, Sacco, Loy, and others succeeded in raising a stock of vaccine virus from horse-pox, or, as Jenner thought, horse grease. Virus from this source was extensively used for a number of years prior to Jenner's death, and "proof was obtained of the patients being duly protected." Equine virus has not been used in England since Jenner's time, unless it has been handed down since then by arm to arm vaccination.

In France, however, at present equine virus is quite extensively used, and M. Layet, of Bordeaux, has twice renewed his stock of virus from the horse, and he testifies that it has given great satisfaction.

And this is the evidence upon which we are asked to conclude that cow-pox and small-pox are radically dissimilar diseases, and we are, therefore, to abandon vaccination! It is impossible to read Crookshank's book without being struck with its partisan tone. Everything unfavorable to the operation is given great prominence and emphasis. Unfairness and even dishonesty are imputed, not only to Jenner, but to other advocates of vaccination; and he entirely neglects to inquire into its prophylactic power, as shown by actual experience for the past hundred years. According to him Jenner was a man of no special calibre; he made no discovery, performed no new experiment, except, possibly, inoculation from horse-pox, and his "masterly induction" was not only not "masterly," but absolutely untenable.

It would appear that the legitimate inference from the facts so laboriously collected by Crookshank is altogether different from that which he has drawn. He has cited testimony, already detailed, which shows that a typical vaccine vesicle can, by management, be produced from different sources, namely—small-pox, cow-pox, horse-pox, sheep-pox, goat-pox, cattle plague, and from the variolated cow, as well as by retro-vaccination, and that a great deal of evidence has been brought forward to prove that they all afford protection against small-pox both by inoculation and infection. Some years ago the cattle plague, or rinderpest, appeared among the cattle in certain portions of England, and Murchison theorized that if this disease were the analogue of human small-pox, vaccination of cattle with vaccine virus ought to protect them against infection. He therefore made some experiments in order to ascertain if this were true. (*Lancet*, 1866; page 301 and 356.) Cattle were vaccinated in thirteen different herds where rinderpest had affected some of the animals. The vaccinated cattle either escaped the disease or suffered from it in a mild form, the protection afforded by the operation being, however, temporary.

M. Haccius, Director of the Vaccinal Institute of Lancy, at Geneva, and Eternod, Professor of Histology in the Geneva School (*Boston Med. and Surg. Journal*, January 22, 1891, page 101) have recently published the results of their investigations as to the identity or duality of small-pox and cow-pox. They inoculated a heifer with virus from a case of confluent small-pox, and propagated the resulting stock to the fourteenth generation, producing effects absolutely identical with those of vaccine virus. They stated that virus from the fourth generation has produced typical effects used for the purposes of vaccination. They have inoculated with small-pox virus a large number of animals and always with success.

In their operations they pursued a different plan from that followed by former investigators in this field, that is, they simply denuded a limited surface by scraping with a piece of glass or other instrument, merely drawing the faintest tinge of blood, the method ordinarily pursued now in vaccinating, then with a spatula rubbed in the virus. Ceeley, Baron, Thiele, Voigt and others inserted the virus deeply into incisions made through the skin and very often by this method failed to infect the animals. All the animals thus variolated by Haccius and Eternod were afterwards vaccinated, but they proved refractory. Their conclusion, therefore, was that vaccinia and variola are identical, the former being a modified and attenuated form of the latter. The conclusions reached by the Lyons Commission about forty years ago were (small-pox and cow-pox, Auzias-Turenne, Crookshank, Vol. ii, p. 546): 1. "Cow-pox and small-pox can be inoculated in bovines and equines; the first energetically, the second feebly; 2. Whatever may be their successive transmissions direct or crossed, these two diseases breed true on every soil; 3. The protection from one by the other is assured in every case."

Chauveau, who was one of the most prominent members of this commission, has reviewed the report of Haccius and Eternod, and has repeated with their lymph some of their experiments (*Boston Med. and Surg. Jour.*, Dec. 3, 1891, p. 607). He fails to corroborate the conclusions reached by these gentlemen. The lymph used by Chauveau was from the eighth generation and he found that in every case the animal experimented on showed an eruption which had special characters distinguishing it from vaccinia. The animal thus inoculated could not afterwards be successfully vaccinated. He therefore substantially maintains the conclusions of the Lyonese Commission, believing that while they must be regarded as distinct diseases, they proceeded from the same origin, a fact which had not yet been established. As to preventive inoculations he formulates three methods as follows: 1. Fabrication of prophylactic substances by pathogenic agents outside the organism to be rendered immune, and the introduction into this organism of the said substances in sufficient quantity to confer immunity, these substances having been, by the proper manipulations, freed from the virulent elements properly so-called and rendered inoffensive. 2. Fabrication in the organism to be protected of prophylactic substances by pathogenic agents, with the germs of which inoculation has been made under conditions which insure the benignity of their infectious effects. 3. Fabrication of the vaccinal substance by a virus very like the virus against which immunity is sought, but belonging to another species." In the third category Chauveau would place the vaccinal substance fabricated from the microörganism of chicken cholera which possesses the property of conferring immunity against charbon, and here also belongs the virus which is used as a prophylactic against small-pox.

Bacteriological research in the class of variolous diseases of men and animals is still in its young infancy, nevertheless, Coze, Feltz, Lugenbühl, Weigert, Strauss, Garrè and Wolff assert (Rohè, Textbook of Hygiene, 2nd Ed., p. 302) that they have found specific microörganisms in the contents of variolous pustules, in the blood of patients suffering from the disease, and in vaccine lymph.

Hallier (Transactions Am. Med. Ass'n., 1872, p. 230) made cultivations from both vaccine and variolous lymph on such media as lemons, white of egg, and starch moistened with a solution of phosphate of soda. A number of fungi developed and Hallier thought he had traced the origin of both the vaccine disease and variola to the same fungus and thus explained the prophylactic influence of one over the other. Bender, in 1859, made microscopic examinations of matter from small-pox pustules in which he found spores.

Salisbury repeated the experiments of Hallier and traced the origin of these diseases to a plant which he called *ios Variolosa Vacciola*. This plant presented two phases, the fungoid *ios Variolosa*, and the algoid *ios Vacciola*. He thought that in variola the vegetation developed in all its phases, and that in vaccinia only the algoid phase was reached, the *ios vacciola*. These investigations were conducted before the science of bacteriology existed and are only interesting as a prelude to subsequent studies. Since Koch demonstrated that certain germs suspected to be pathogenic could be cultivated in media outside the body, attempts have been made to cultivate the microörganisms of vaccinia and variola, for a number of bacteriologists have found such microphytes which in their physical aspects are identical in the two diseases, and which it was once thought Chauveau had proven to be the specific cause of small-pox.

Quist, of Helsingfors, Finland (Ref. Handb'k of Med. Sciences, Vol. vii, p. 551), succeeded in cultivating vaccine virus on artificial media, the specific element he thought to be a spherical micrococcus of small size, and a bacillus which he regarded as the adult form of the same.

Garrè in 1887 reported the results of his experiments. He succeeded in producing a culture of the cocci in culture ovens or agar-agar and blood serum, but vaccinations with these cultures failed. Some years ago the Worshipful Company of Grocers of London offered a prize of £1000 for the solution of the problem which was stated by them as follows: "To discover a method by which the vaccine contagion may be cultivated apart from the animal body in some medium or media not otherwise zymotic; the method to be such that the contagion may, by means of it, be multiplied to an indefinite extent in successive generations, and that the product, after any number of such generations shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph."

So far as I am aware this prize has never been claimed, but it stimulated anew investigations in this direction. In suitable media, as in the arm of an unvaccinated person, the microörganisms of vaccinia multiply with great rapidity. The cell increases in length, becomes constricted about the middle resembling somewhat a dumb-bell, this constriction increasing until the cell is cut in two. Dr. Dougall experimented with several artificial media after carefully examining the natural medium vaccine lymph. This he found to be free from microörganisms other than the vaccine cells, and he therefore concluded that the artificial medium must be aseptic. He performed one hundred and eighteen experiments during a period of three years, using as media, egg albumin, veal and beef broths, blood serum, gelatine, meat peptone, decoction of barley, extract of malt, etc., all of which were rendered either slightly alkaline or neutral. Upon using these cultures for purposes of vaccination he failed in every instance to produce the vaccine disease.

In view of all these facts and experiments it is difficult to understand how Crookshank could arrive at the conclusion that cow-pox and small-pox are radically dissimilar diseases. On the contrary it would seem more rational to conclude that there is *something* in common between all the diseases mentioned, from which vaccine material has been derived, namely, small-pox, cow-pox, horse-pox, sheep-pox and cattle plague. That though small-pox and cow-pox may be marked by many points of dissimilarity, it is entirely within the range of probability that they sprang from the same original source. If the specific active cause of these diseases is a microörganism, as analogy would lead us to think probable, to say the least, it is certainly conceivable that originally it may have been one and the same; that during the long period of time in which the diseases have existed on this planet, this germ may have become so modified in its pathogenic properties by its environments as to give rise to diseases which in many respects are dissimilar. The points of dissimilarity between variola hæmorrhagia, and a mild varioloid in which there are but few or a single pustule, are certainly very striking and yet no one for a moment doubts that they are the same disease. The dissimilarity between these two forms of the same disease is not less striking than that between a mild varioloid and the vaccine disease, and is certainly much greater than that between the inoculated small-pox, as observed by Adams, Guillon and Thiele, and vaccinia, where the diseases were entirely indistinguishable.

It is by no means impossible that bacteriological studies of these diseases of men and animals which present so many points of dissimilarity, will be found to have developed their distinguishing characteristics by a process of evolution, and it is possible even that the circumstances which have resulted in their differentiation may be pointed out. Man himself has been differentiated by a process of evolution and so in all probability have the infectious disease germs.

We are thus compelled to dissent from Crookshank's conclusion that cow-pox and small-pox are radically dissimilar diseases. They *may* be radically dissimilar but it appears to me that he has failed to establish that fact on any sufficient grounds. And hence his main conclusion that cow-pox does not protect against small-pox does not follow.

While from a scientific standpoint it would be highly interesting to know the nature of cow-pox and just how and why it operates to protect against small-pox, our lack of such knowledge is a very flimsy excuse for abandoning the operation, if it can be shown by experience that it actually does exert a prophylactic influence over small-pox. We do not know the *modus medendi* of quinine in ague or salicylic acid in rheumatism, but does any one refuse to prescribe these drugs under these conditions on that account?

The time has long since passed when a question of this kind can be settled on theoretical grounds. The operation has been in vogue throughout the civilized world for nearly a hundred years, and we are entirely independent of theory in discussing its efficacy. Vaccination, therefore, must stand or fall according as experience shows that small-pox is less likely to occur in the vaccinated than in the unvaccinated; that small-pox is less fatal in the vaccinated than in the unvaccinated; and that the dangers of the operation are practically nil.

ITS PROPHYLACTIC POWER.

When Dr. Jenner published his account of Variolæ Vaccinæ in 1798 he believed that successful vaccination would confer permanent immunity from small-pox. He said: "But what renders the cow-pox virus so extremely singular is that the person who has been thus affected is forever after secure from the infection of small-pox; neither exposure to the variolous effluvia nor the insertion of the matter under the skin producing the distemper." The early vaccinators were all impressed with this belief. Jenner particularly advised that small-pox inoculation should be performed after successful vaccination in order to put its virtues to the crucial test, and this advice was followed in a great number of cases and with uniformly satisfactory results. But it was not many years before cases of small-pox began to appear among the vaccinated. An investigation of these cases led to a doubt as to whether the victims had really been *successfully* vaccinated, and Jenner was led to believe that they had suffered from what he was pleased to term spurious cow-pox as distinguished from the genuine cow-pox.

The sources of such spurious disease being, as stated by him, "matter arising from pustules on the nipples or udder of the cow, which pustules contain no specific virus; matter (although originally possessing the specific virus) which has suffered a decomposition either from putrefaction or from any other cause less obvious to the senses; matter from an ulcer in an advanced stage, which ulcer arose from a true cow pock." In addition to these sources he referred to certain morbid matters generated by a horse, but which at the present time is of little interest to us. It is perfectly manifest that if a person is vaccinated with matter from any of these sources a *successful* vaccination can not result. It is well known that vaccine virus is not easily preserved; that a temperature much above 65° F., and moisture rapidly destroy its specific qualities, and that bovine virus loses its properties more readily than humanized. Nevertheless, I apprehend that virus thus rendered specifically inert, and also under some circumstances, as when there is a great demand on the propagators for virus, when taken at too late a stage of the disease, is used quite extensively, particularly at times of small-pox scares. The result of vaccinating with this spurious virus is an atypical vesicle, such as most any other local irritant might produce, and an atypical scar, and it does not afford any protection against small-pox. Again, the operation may be followed by a deep, ill-looking, sloughing ulcer, generally as a result of an injury to the sore by which the vesicle is opened and offending matter introduced into the wound from without. In these cases the vaccination should not be regarded as successful, and the operation should be repeated within a short time after the recovery of the patient. Complications of this kind are most apt to occur in people who are careless as regards personal cleanliness.

Ultimately, however, small-pox occurred after perfect vaccination, a fact which some of the early operators were extremely loath to admit, but small-pox itself has not infrequently occurred a second, third, and even fourth time in the same person. And not only is this true, but "many cases of second small-pox have been in those persons who in the first instance had undergone it in the most severe and dangerous form." (Good's Study of Medicine, vol. I., page 634; sixth American edition, 1835.) A notable example of this fact was furnished in the case of Louis XV. of France, who, having previously had small-pox in a severe and dangerous form, died of it in 1774.

When small-pox was epidemic in Marseilles in 1825, 2,000 of the inhabitants of that city had previously had the disease. Of these 20 again contracted it, and four of them died. In 1872, in the Boston Small-Pox Hospital (Boston *Medical and Surgical Journal*, 1872, page 312) there were treated two cases of second small-pox. The first, a woman, died of the second attack twelve weeks after the first; the other was a child one year old. Dr. Webb (Ibid, page 397) saw twenty-three cases where small-pox occurred twice in the same person, and one case where it occurred for the third time.

Dr. Thomson (Watson's Practice of Physic, page 1008, second American edition, 1845), during an epidemic of small-pox in Scotland, in 1818–19, saw seventy-one cases occurring in persons who had previously had the disease, and of which number three died.

The very first men who recognized the disease in Europe also noted facts similar to the above. Thus, Rhazes, Avicenna, and also Ahron, asserted that the disease occasionally occurred a second or even third time in persons apparently having a strong predisposition to it, and Borelli, of Naples, in the seventeenth century, recorded the case of a woman who recovered from seven distinct attacks of small-pox, and died of the eighth. In the London Small-Pox Hospital, in 1844, an Irishman died of the disease who had been successfully vaccinated in infancy, and who early in life had had small-pox.

Inasmuch, therefore, as small-pox occurs, with a certain degree of frequency, for the second time in the same individual, it ought not to surprise any one if it should occasionally occur after a perfectly successful vaccination. It is not now claimed "that the person who has been thus affected is forever after secure from the infection of small-pox," but it is admitted that it *may* thus occur.

It is by no means an uncommon thing for a discoverer or inventor to expect greater things as a result of his invention or discovery than subsequent events appear to justify. And it has been so with the operation under consideration; "we have learned to correct our sanguine views, and prescribe a narrower boundary for the things we expect to attain."

It is astonishing to one looking over the literature of the subject of vaccination to find what an amount has been written upon it, both for and against. And what has struck me as specially remarkable is the incoherance and irrelevancy of a great deal of it. Page after page appear of words—empty words—which, if they convey any idea at all, have no reference to the question at issue. Any ideas that the Chinese may have had a thousand years ago as to the nature of small-pox can certainly have nothing to do with the efficacy of vaccination as a prophylactic against the disease, and yet that subject is brought up in a recent attack upon vaccination. It has been claimed that small-pox was on the decline at the time of the introduction of vaccination; that being a disease of Oriental origin it would naturally follow the history of bubo plague, a disease of the same geographical origin, and retreat from Europe into Central Asia. It is said that in the East tradition pointed to the camel as the original source of small-pox; but the camel inhabited North America ages before he appeared in Asia. It must be remembered that Central Asia was the cradle of the human race; that from ancient Bactriana sprung those races which have since spread over and civilized Europe and America, so that at the present time no civilized country is occupied by the proper Autocthons of the soil. In like manner a number of infectious and contagious diseases other than small-pox may be traced to this geographical origin, notably diphtheria, pertussis, measles, scarlatina, and probably also typhoid fever. These diseases, including small-pox, have shown as yet no more disposition to cease their migrations and return to the locality from which they sprung than has the human race itself, and there is no reason to expect that they will.

It is entirely irrelevant to inquire the number of deaths from small-pox per million of population in any period of years subsequent to the practice of vaccination, compared with an equal period prior to its practice, when, of course, records were everywhere incomplete and statistics thoroughly unreliable.

Nor is it any more pertinent to the issue to compare the deaths per million of population living with the proportion of the vaccinated to the unvaccinated. As a sample of this method of argument I append the following, which I have recently seen in print:

DEATHS FROM SMALL-POX IN SWEDEN.

	Vaccinated per 1,000 inhabitants.	Deaths from small-pox per million inhabt'nts.
1825	250	400
1839	590	575
1851	735	700
1874	970	960

Showing, of course, according to the anti-vaccinationists way of looking at it, that the larger the proportion of the vaccinated in any community the greater the mortality from small-pox.

I have no hesitation in affirming that these figures prove absolutely nothing pertinent to the issue. In 1874 the population of Sweden, in round numbers, was 4,200,000, and hence 150,000 were unvaccinated, and these statistics give us no reason to doubt but that the entire mortality from small-pox in this year was furnished by the unvaccinated. Hence the uselessness of such tables.

The claim that the mortality from other diseases has increased since the introduction of vaccination, is too flimsy and ridiculous to require a moment's notice. As already stated, vaccination must be abandoned or not according as it shall appear that small-pox is less liable to occur in the vaccinated than in the unvaccinated; that small-pox is less fatal in the vaccinated than in the unvaccinated; and that the dangers of the operation are practically *nil*.

Dr. Woodville, within a short time after the outbreak of cow pox in the London dairies in 1799, was able to report on nearly 500 successful vaccinations. In a large number of these cases, I think 160, the patients were afterwards unsuccessfully inoculated with small-pox virus. Crookshank thinks that most of these cases were in reality inoculated with small-pox virus at the time of their vaccination, inasmuch as more or less extensive secondary eruptions occurred, and that this accounts for their subsequent immunity from the disease. This may be so or may not, and in any event we can get along very well with our argument if we exclude these cases from records as being uncertain. Dr. Joseph Marshall, who in the year 1800 A.D., made an extensive tour, teaching and practicing vaccination, was soon able to report on [illegible]3 cases of which he kept careful notes. Of these [illegible] afterwards inoculated 211 with small-pox virus, failing to produce the disease in any instance. I also call to your memory the experiment on the six negro children who were shipped on board the vessel "Jeune Caroline," in 1804, to the Seychelles Islands; the inoculation of a number of natives of Burmah last year, after successful vaccination; and the numerous experiments of the same kind, and with the same result, performed by Jenner hinself and his immediate successors, which experiments are at the present time impracticable.

In 1853 the Epidemiological Society of London received two thousand letters from medical men, affirming their belief, from personal observation, in the protective power of vaccination.

Dr. Simon received 540 similar letters from eminent English and foreign physicians out of 542 to whom letters of inquiry were addressed. One of these observers, Marshall, showed that of 757 persons exposed to small-pox 231 had been vaccinated, and of these 27 contracted the disease, whereas of the remaining 526 unvaccinated 519, or all but seven, took it. Dr. W. L. Atlee, of Lancaster, Pa., in 1880, after sixty-two years' experience with vaccination, and having vaccinated and revaccinated thousands of children, affirmed in the most decisive manner his belief in the prophylactic power of the operation, and that there had been no deterioration in the protective influence of the virus during those years. (*Amer. Journal of the Medical Sciences*, 1880, p. 189.) He says: "I have tested the efficacy (of the virus) by inoculating for small-pox after vaccination; have taken patients after vaccination to cases of malignant small-pox in small and hot stove rooms, and exposed them to the foul atmosphere for fifteen or twenty minutes, secure from danger. In one case of a mother with six unvaccinated children, one at the breast, who had a severe attack of small-pox, as soon as I discovered the nature of the case, I vaccinated all the children with a vaccine crust, and they all took the vaccine disease. The room—it was in February—was a small 10×12 feet room, with a hot tin-plate stove and but one bed, on which they all slept, and which was saturated with small-pox contagion; yet these children picked off the scabs from their mother's body, and the baby nursed at her breast, and no one took the disease."

In November last, small-pox appeared among the negroes in the little village of Harris' Neck, Georgia. Passed Asst. Surgeon J. H. White, in command of the South Atlantic Station, U. S. Marine-Hospital Service, was despatched to the locality to investigate the outbreak, and take the steps necessary for its suppression. He reported, November 27, 1891 (Abstract of Sanitary Reports), that fourteen houses were infected. Fifty-six of the inmates of these houses were unvaccinated, and all but one contracted the disease. The one that escaped was an infant 2 weeks old, an age at which children are, as a rule, exempt from all contagious diseases. There were thirty-three inmates of these houses that had been vaccinated, mostly years ago; of these twenty contracted the disease, all having it in a mild form with one exception, that of a woman who had been vaccinated many years ago, and who had corymboid variola at this time.

When small-pox visited Sheffield, Eng., in 1881, there were in that city, in round numbers (*British Medical Journal*, Vol. i, 1888, p. 308), 100,000 children under 10 years of age; of these 95,000 had been vaccinated, and 5,000 were unvaccinated. The 5,000 unvaccinated furnished 172 cases of the disease, whereas the 95,000 vaccinated only furnished 189 cases. During the small-pox epidemic in Marseilles in 1825, already referred to, 8,000 unvaccinated persons furnished 4,000 cases, whereas 30,000 vaccinated only furnished 2,000 cases. These facts indicate unequivocally that the vaccinated are much less likely to contract the disease than the unvaccinated. This was the experience of Dr. Parke, who accompanied Stanley on his recent African expedition. He vaccinated forty native bearers (*British Medical Journal*, Vol. i, 1890, p 1084). On the return, small-pox broke out in the camp, skipping thirty-eight of those vaccinated, and attacked two who had poor scars, but who recovered promptly, while the unvaccinated were dying by scores. The mortality tables of small-pox hospitals show the relative death-rate among the two classes of patients, which can be seen in the subjoined tables. Reviewing them, we observe that the lowest mortality among the unvaccinated was 21 per cent., and the highest mortality among the vaccinated was 19.5 per cent., which, without going further, would show a decided advantage on the side of vaccination. But a further study of the tables shows an *average* mortality among the unvaccinated of 44.5 per cent., whereas among the vaccinated it was but 6.72 per cent., a difference of 37.78 per cent. in favor of the vaccinated.

These tables also show a decided advantage of revaccination, the death-rate among the revaccinated in some instances being less than 1 per cent. We must, therefore, conclude that small-pox is less fatal in the vaccinated than in the unvaccinated.

If the dangers of the operation are so great as to render it a questionable procedure, we ought to be able to derive valuable information on this point from men who have been so situated as to see a great many cases. In 1885, Dr. G. G. Craig, of Rock Island, Ill. (*Sanitarian*, 1891, p. 561), addressed a circular to the health officers of the cities of the United States containing more than 20,000 inhabitants, asking information on this point. He received replies from eighty-five. Dr. DeWolf, then and for some years previously, Health Commissioner of the City of Chicago, stated that since 1880, 250,000 vaccinations had been done by officers of his department, and that no evil result beyond an ulceration at the seat of the sore following some local injury, or an occasional abscess in the armpit had occurred in the whole number.

Dr. J. H. Rauch, for many years secretary of the State Board of Health of Illinois, was recently examined on this subject by the Royal Commission on Vaccination, he having had in all probability a larger experience in this field than any man in this country. He testified that since 1861 he had personally vaccinated and had under his immediate supervision about 250,000 people; that he had never during that time seen a case of transmitted syphilis; that there had not been a death as the result of the operation; but that he had occasionally seen ulcers at the seat of the vaccination. Here, then, are 500,000 cases of vaccination without a death or any accident worse than an axillary abscess or a slow healing ulcer. The records of the public vaccinators in English cities present about the same facts.

The records of the Royal Health Office of Germany (Reference Handbook of Med. Science, Vol. vii, p. 557), show that more than 2,250,000 vaccinations were performed in the empire in one year. Among these there were four cases of inflammation of the lymphatic glands, all of which promptly recovered. There were no cases of either transmitted or evoked syphilis, but there were a number of cases of erysipelas with eleven deaths. These cases upon investigation were ascertained to be due either to the carelessness of the patients or their parents. Erysipelas is a disease caused by a specific microörganism, and can only result from the presence of this microbe at the seat of the disease; it may follow any abrasion of the skin, not as a *result* of the abrasion but as a coincident event, and this is the case when it follows the operation of vaccination.

Last winter a large number of children were vaccinated in the schools of this city by officers of the Health Department; in one case a rather severe erysipelas followed the operation. Upon investigating this case, it was learned that the mother was suffering from erysipelas at the time the child was vaccinated; that she was anointing the affected parts with an ointment prescribed by her attending physician; that she conceived the idea that this ointment would be a good thing to apply to the child's sore arm; that this idea she carried into effect thereby inoculating the arm with the germs of the disease which promptly made its appearance and was, of course, attributed to the vaccination. It thus appears that among the 500,000 vaccinations reported by Drs. DeWolf and Rauch there were no fatalities; that out of the 2,250,000 German vaccinations there were eleven deaths from erysipelas following the operation, being a mortality of one in 204,500. These figures would not appear to indicate that this operation is one of very great gravity, but they are just about what most physicians would expect judging from his own experience and that of his immediate professional neighbors.

During the first year of life the child is specially subject to various forms of skin eruptions, and if they appear after it has been vaccinated the fact is seized upon as a *propter hoc*, whereas by no possibility can the relationship of cause and effect be established. It has never been shown that any of these skin eruptions are transmitted from one individual to another through the medium of vaccine virus, but in a child constitutionally predisposed to these disorders it is conceivable that the local irritation of the vaccination may call them into existence. This is well recognized by the profession, and hence a physician would be justified in postponing the operation in a child in whom he had reason to suspect that this predisposition existed. Thus in Ireland in the second quarter of 1890, the operation was postponed for various reasons in 2,909 cases.

If, therefore, the operation is not done on young, feeble and sickly children, or during the period of dentition, bad results or accidents will be exceedingly rare. If, on the other hand, such infants are vaccinated it need not excite surprise if, now and then, an hereditary predisposition to disease manifests itself, just as it would after any other affection of equal severity.

There is one disease, however, which is capable of being transmitted from individual to individual through the medium of vaccine virus, and that is syphilis. With us in America this is a question of little importance, as we use almost exclusively bovine virus in our operations. Inasmuch, then, as the cow is insusceptible to syphilis it is impossible to transmit the disease by means of this virus. The facts here brought forward are, I think, sufficient upon which to base the three propositions sought to be established, namely, that small-pox is less likely to occur in the vaccinated than in the unvaccinated; that it is less fatal in the vaccinated than in the unvaccinated; and that the dangers of the operation are practically *nil.*

TABLE I.

In Prussia in 1859 there were (N. A. Med. Chirurg. Review, Vol. V, 1861, page 1101, from report published by authority of Prussian government):

	Cases of Small-pox.	Among the Vaccinated.	Among the Unvaccinated.
	16,035	13,364	2,671
Deaths	1,371	801	570
Per Cent.	8½	6	21

TABLE II.

(N. A. Medico-Chi. Rev., Vol. IV, 1860, page 516. Alex. Wood, President Royal Coll. Phys., Edinburgh.)

Mortality from small-pox in the unvaccinated, taken generally	35%
“ “ “ “ “ children under 5 yrs.	50%
“ “ “ “ badly vaccinated	15%
“ “ “ “ vaccinated generally	7%
“ “ “ “ well vaccinated	1%

TABLE III.

(Lancet, 1863, page 688. Marston, surgeon of Small-pox and Vaccination Hospital, Highgate.)

Mortality of small-pox among the unvaccinated	36%
“ “ “ vaccinated	6.76%
“ “ “ “ having 1 scar	7.57%
“ “ “ “ “ 2 scars	4.13%
“ “ “ “ “ 3 “	1.85%
“ “ “ “ “ 4 “	0.74%

TABLE IV.

Small-pox at Latrobe, Penn., 1871 (Transact. Am. Med. Soc., 1872, page 454).

	Total Cases Small-pox.	Cases Among the Unvaccinated.	Cases Among the Vaccinated.
	51	21	30
Deaths	11	10	1
Per Cent.	21½	47½	3½

TABLE V.

(Med. and Surg. Reporter, Vol. XXX, 1874, page 281. Dr. Martin Luther, who was a surgeon in the Prussian army during Franco-Prussian war.) In three German hospitals there were admitted:

	With Small-pox.	Number Vaccinated.	Number Revaccinated.	Number Unvaccinated.
	536	401	110	25
Deaths	34	15	2	17
Per Cent.	6.34	3.74	1.82	68.

TABLE VI.

Philadelphia Municipal Hospital, 1871 (Transact. Am. Med. Ass'n, 1872, page 442).

	Total Cases Small-pox.	Unvaccinated.	Vaccinated in Infancy. Good Mark.	Vaccinated in Infancy. Fair Mark.	Vaccinated in Infancy. Poor Mark.
	1,189	390	331	166	302
Deaths . . .	382	254	33	27	68
Per Cent . .	32.	65.1	9.9	16.2	22.5

No statistics as to revaccination.

TABLE VII.

Dr. Robt. Grieve, Hampstead, in paper read before the Epidemiological Society of London (Med. Record, Vol. VIII, 1873).

	Total Cases Small-pox Observed.	Unvaccinated.	Vaccinated.
	6,221	1,248	4,973
Deaths	1,205	638	567
Per Cent.	19.38	51.12	11.10

The number of vaccination marks were noted in 3,555 instances.

Those having 1 mark	2 marks	3 marks	4 marks	5 or more marks
Mortality per cent., 17.39	12.17	10.58	8.38	6.43

TABLE VIII.

(Lancet, 1871, pages 315-316. Dr. R. Grieve, medical director Hampstead Small-pox Hospital.)

	Cases Small-pox Admitted Dec. 1, 1870—Feb. 18, 1871.	Number Vaccinated.	Number Unvaccinated.
	800	591	209
Deaths	154	58	96
Per Cent.	19.25	9.8	45.8

TABLE IX.

Gladbach, Rhine Province, Prussia. Population, 47,800. (British Med. *Journal*, Vol. I, *1890, page 872.)*

	Total Cases Small-pox.	Unvaccinated.	Vaccinated.	Revaccinated.
	91	8	48	38
Deaths	14	4	9	1
Per Cent . . .	14.9	50.	18.75	2.63

TABLE X.

Drs. Seaton and Buchanan (Reynolds' System of Medicine, Hartshorne's, Vol. I, page 169), during an epidemic of small-pox in London in 1863, *examined over 50,000 children in various institutions.*

360 per 1,000 having no vaccination mark had small pox.
6.8 " " 1 " " " "
2.49 " " 2 " marks " "
1.42 " " 3 " " " "
0.67 " " 4 or more vaccination marks had small pox.

TARLE XI.

(Boston Med. and Surg. Jour., 1872, page 308.) Records of Boston Small-pox Hospital.

8 per cent. of cases of small-pox died who bore any mark of vaccination.
67 " " " " " " no " "

TABLE XII.

(British Med. Jour., Vol. I, 1888, page 151. Dr. Tomkins, Montreal Epidemic of 1885-86.)

	Total Small-pox Cases in Hospitals.	Unvaccinated.	Vaccinated.
	1,332	805	527
Deaths	418	315	103
Per Cent	31.3	39.1	19.5

Under 10 yrs. of age . 489	Mostly unvaccinated.		Over 10 yrs. of age . 843	Mostly been vaccinated once.
Deaths 202			Deaths 216	
Per Cent 41.3			Per Cent. . . . 25.62	

TABLE XIII.

(Brit. Med. Jour., Vol. I, 1888, page 308, editorial.) Sheffield, Eng., Recent Epidemic of Small-pox.

100,000 children under 10 years of age.
95,000 were vaccinated. Furnished 189 cases small-pox, 2 deaths.
5,000 were unvaccinated. Furnished 172 cases small-pox, 70 deaths.

London, 1881.
916,000 children under 10 years of age.
861,000 were vaccinated. Furnished 125 deaths from small-pox.
55,000 were *unvaccinated. Furnished 782 deaths from small-pox.*

TABLE XIV.

(Sanitarian, April, 1891, page 365. Dr. Barry's Report of the Small-pox Epidemic in Sheffield, Eng., 1887-1888.)

101 pe [illegible] lren under 10 years of age had small-pox,

5 per [illegible] under 10 years of age had small-pox, and 9 per cent. died.

TABLE XV.

Small-pox and Vaccination Hospital, London. (Reynolds' System of Med., Vol. 1, Hartshorne's.)

	Total No. Unvaccinated from 1836-1851.	Total No. Vaccinated from 1836-1855.
	2,654	4,896
Deaths	996	316
Per Cent	37.	6.56

TABLE XVI.—(Ibid.)

	Having 1 Good Vacc. Mark.	Having 2 Good Vacc. Marks.	Having 3 Good Vacc. Marks.	Having 4 or More Good Vac. Marks.
	1,032	873	307	358
Deaths . .	39	20	3	2
Per Cent .	3.83	2.32	0.99	0.55

TABLE XVII.

Small-pox in Marseilles in 1825. Population, 40,000. (Watson's Practice of Physic, page 1,008; 2d Am. ed., 1845.)

	Vaccinated.	Unvaccinated.	Previously had Small-pox.
	30,000	8,000	2,000
Contracted the Disease	2,000	4,000	20
Deaths.	20	1,000	4
Percentage of Deaths among those Attacked	1	25	20

TABLE XVIII.

Small-pox in Scotland, 1818-1819. Dr. Thomson saw in this epidemic 586 cases. (Ibid, page 1008.)

	Vaccinated.	Unvaccinated.	Previously had Small-pox.
	310	205	71
Deaths	1	50	3
Percentage of Mortality among those Attacked	.32	24.39	4.22

TABLE XIX.

Small-pox in Hamburg, August 19 to November 18, 1871. (N. Y. Med. Journal, 1872, page 213.)

	Vaccinated.	Unvaccinated.
	2,954	1,010
Deaths	347	700
Mortality	11.74	69.30

TABLE XX.

Small-pox in the Philadelphia Municipal Hospital, 1872. (N. Y. Med. *Record, 1872, page 166.)*

	Vaccinated.	Unvaccinated.
	550	677
Deaths	8	353
Mortality	1.45	52.14

TABLE XXI.

Small-pox at Harris' Neck, Georgia, 1891; 14 Infected Houses. (Abstract of Sanitary Reports, Nov. 27, 1891. Published by U. S. Marine Hospital Bureau.)

	Variolated.	Vaccinated.	Unvaccinated.
	12	33	56
Cases of small-pox	None	20	55
Deaths from small-pox , ...	"	Not stated	13
Mortality per cent.		. .	23.63

For the past twenty years bovine virus has been used very largely in the United States, and at the present time nearly all physicians use it to the exclusion of humanized virus. The propagation of animal virus, though in vogue for many years in Italy, was not practiced until the year 1866 elsewhere. Troja, of Naples, inoculated a heifer with virus from the arm of a child, and thus by retro-vaccination initiated a stock of vaccine virus which he propagated from animal to animal for a number of years. His neighbor, Negri, continued the work until 1820, when he encountered a case of natural cow-pox in Calabria and after that time propagated virus from that source.

An unsuccessful attempt was made in 1864 to introduce bovine virus into France. In 1866, in the month of March, a case of natural cow-pox appeared in the town of Beaugency, France, about fifteen miles from Orleans. The disease being recognized, Depaul, the director of the government vaccine establishment in Paris, was notified, and he visited the case, securing some of the virus, with which he began vaccinating animals in succession. Virus from this source was soon in use throughout France. In 1870, Dr. Henry A. Martin, of Massachusetts, received a supply of this Beaugency virus, which he has since propagated, and which for a number of years was the only bovine virus used in this country.

Dr. Griffin, of Fond du Lac, Wis., established stables for the propagation of animal virus in 1872, using Beaugency stock. Dr. Griffin later, 1880, imported virus from Brussels. This is the Belgian stock, for a number of years propagated by Dr. Warlomont, director of the vaccine establishment at Brussels. This stock was derived from a case of natural cow-pox occurring in the neighborhood of Esneaux in 1868.

Dr. Griffiths, of Brooklyn, N. Y., began in 1878 propagating virus derived from a case of natural cow-pox occurring somewhere in the interior of the

State. The various vaccine farms in this country at the present time are propagating virus from one of these three stocks (DeWolf, *Chicago Med. Journal and Examiner*, 1881, vol. xlii, p. 481, ex seq.), all of which have been shown to be vigorously prophylactic against small-pox.

In seasons when small-pox is prevalent, there is always a great and unusual demand on the propagators for virus, and the temptation is necessarily great to make every animal produce the largest possible amount of lymph. It may thus happen that points are charged with a material from a vesicle at too late a period of the disease, or the discharge may be increased by irritating the parts so that points charged under such circumstances, will not produce the genuine and protecting vaccine disease, but a spurious cow-pox affording no such protection.

It would, therefore, seem that it would be eminently advisable and proper that vaccine farms should be under government supervision, as it is certainly an injustice to vaccination to be held responsible for the shortcomings of propagators. Dr. Craig, of Rock Island, Illinois, ten years ago strongly urged this point before the Illinois State Board of Health.

803 Grand Ave.

SOME CONTRA-INDICATIONS FOR THE USE OF OPIATES.

Read before the Philadelphia County Medical Society, January 27, 1892.

BY MARIE B. WERNER, M.D.

My object in presenting this subject before the Society to-night is manifold; I wish to show that in general practice the indications are limited for the use of opiates. We must fully realize that we have a broader basis for medical science than symptomatology, in order to give our patient the full benefit of our knowledge. Our position being at all times one of trust, we must endeavor, in helping our patient, to find the cause and remove it, rather than hide the symptoms it gives rise to by an opiate. Aside from the possible mental disturbances such a course of treatment might induce, it often materially complicates surgical efforts to relieve patients, the results of which we have repeatedly heard discussed at these meetings.

In order to discuss this drug with due fairness, it will be necessary to give a few moments to the consideration of its physiological action on the human economy. Dr. H. C. Wood, in his *Treatise on Therapeutics*, says: "When opium is taken in such a dose as to produce its mildest physiological effects, it exerts a quieting influence, inducing a peculiar dreamy condition; after a length of time varying according to the idiosyncrasies of the patient and the dose of the drug, this condition passes into sleep, either light, dreamful, natural, or heavy and deepening into stupor. On awakening, the patient may return at once to his normal condition; but very often he experiences a state of depression shown by languor, a little headache, nausea, or even vomiting, which may last for some hours. One of the most common of these departures from the ordinary course of symptoms is an excessive depression following the sleep produced by moderate doses of the medicine. This state is seen, as far as my experience goes, most usually in females of weak, nervous organization, such as are peculiarly liable to attacks of neuralgia. The symptoms are a feeling of weakness and prostration, often accompanied by chilliness, dull headache, and giddiness, but especially marked by intense nausea and frequent vomiting."

Bartholow states that, as a rule, opium does harm in all gastro-intestinal maladies in which there is a deficiency in the proper secretion, or a suspension of the functions of the liver and kidneys.

Dr. J. B. Mattison, in his valuable paper read before this Society in October, 1890, entitled "The Renal Status of Opium Habitués," after a careful analysis, arrived at the following conclusions: *First*, the habitual use of opium in any form will cause organic renal disease; *second*, the changes most likely to be met with are cirrhotic; *third*, that the rationale is threefold. Vasomotor changes, impaired general nutrition and inflammatory action due to non-eliminated irritant products. I would further call attention to the valuable contributions of Dr. A. Haig, published in the *British Medical Journal*, 1890, in his studies on the influence of opium and morphine on uric acid; also, of the retention of this latter product in the human economy and its relation to the causes of disease. His observations and experiments proved to him that the administration of opium or morphine caused retention of uric acid, accompanied by a reduction of arterial tension; that, when the effect passes off, there is a rebound, with an excessive excretion of uric acid and marked high tension, often accompanied by headache and mental depression.

Let us look carefully into these statements and compare them with our practical experience. We find that, after lulling pain and induction of sleep, we come to a period of depression, even after a moderate dose of the drug. This depression is usually followed by a certain loss of resistance to bear any renewal of pain, and, in consequence, it becomes necessary to repeat the use of the drug; indeed, when we study carefully its action on a previously weak, nervous organization, we find the description given by Dr. Wood very ably described the case for us. He tells us: "The symptoms are a feeling of weakness, prostration, chilliness, dull headache, nausea," etc. In the face of this the questions must certainly present themselves to us: Is it wise to simply gratify the desire of the patient? Would it not be better to study the cause and remove it rather than hide the symptoms which lead us to the origin of the trouble? I refer to cases in every-day practice; cases in which a periodical monthly pain is lulled to sleep by several doses of morphine or opium, while the proper cause is entirely left out of sight. There is no doubt in my mind that cases have come to all of us where a case of chronic constipation or continuous indigestion combined with a nervous, irritable temperament, perhaps, added to that, or independent of this, an unpleasant skin eruption, etc., claimed our attention.

Quite often a question regarding any menstrual difficulties shows that there is some pain, often varying in severity, and the next question, What do you do for the pain? will elicit the answer: Oh! I take a little paregoric, or I have some pills or suppositories I use, perhaps previously given to some member of the family for pain. Not infrequently an investigation will show that the main ingredient is some opiate.

In our day of progressive medical science it becomes necessary that we should join hands and forces —first, to see if the proper hygienic rules regarding clothing, exercise, and cleanliness are scrupulously carried out, and that the proper functions of secretions and excretions are thoroughly understood. If aside from these precautions there is still pain, a local investigation should be made by the physician, and, the condition carefully studied, the cause removed if possible. To give an opiate in such cases I consider criminal, since the patient receives a double injury; not only is she not relieved permanently, but she is robbed of much of her normal resistance, and I fear many have become chronic invalids, for it is a constant struggle to overcome the after-effects of the opiate before the time arrives for another relief of the same sort. If the patient escapes becoming addicted to the opium habit, she cannot escape the local gastro-intestinal irritation which is invariably set up, and which will defy all medication so long as its cause is kept up.

I can at this moment call to mind three cases in which three weeks out of four all sorts of laxatives are used to overcome the amount of morphine taken during the fourth week; the complexion is sallow, the breath heavy, the skin impure, and how can it be otherwise? If an examination reveals no functional trouble other than the local congestion, or possibly some displacement downward induced by improper clothing or a lack of attention to the proper excretions, is it not at once clear that an opiate in the long run increases the cause of pain? Lulling the pain induces no cure, and the resulting constipation acts in two ways to make the patient worse: first, the pressure of a distended bowel; second, the absorption of effete products. Let such conditions continue for some years, as they often do, and we have other factors enter the field to make life miserable—sluggishly acting liver or kidneys, a worn-out stomach, and not infrequently a nervous wreck.

In order to emphasize this point, I will only have to call attention to a series of comparative experiments on animals[1] made by Dr. Edward Levinstein, and reported in his book on "Morbid Craving for Morphine." His deductions from a number of experiments are as follows:

"1. That internal applications of morphine sooner paralyze the digestive powers of the stomach than the subcutaneous injection.

"2. Both ways of administering morphine bring on functional disorders of the secreting nerves.

"3. Both cause catarrh of the stomach and intestinal tract.

"4. Large doses of morphine given internally cause a subacute catarrh of the stomach, on account of the *irritating chemical action of the morphine.*

"5. The subcutaneous injection of morphine causes a chronic catarrh of the intestines in a mechanical manner; in consequence of the impaired influence of the secreting glands due to the action of the morphine, the secretion of the digestive fluids is stopped altogether, or at least diminished in quantity, and consequently the intestinal tract is encumbered for a longer time by the ingesta."

The same author speaks of amenorrhœa and sterility as being a sequence to the continued use of morphine, drawing largely upon the results of his own observations, and accepts Pfiueger's theory in explanation of it.

In these days, when "preventive medicine" is being advocated by all of us who desire to place medical science on the highest standard, should we not think many times more than twice before we write a prescription for an opiate to relieve pain? In the face of all these facts, it becomes a serious question of right and wrong if we stop short of exerting all our knowledge to study the *cause* of the pain we have been called in to alleviate. Often the prescription-book is entirely useless, unless its blanks could be filled with directions to the patient how to dress, eat, and give herself the physical care she needs.

The use of morphine after pelvic operations has been discarded by most of our operators, and clearly has been the means of reducing mortality rates, as well as obviating many of the dreaded after-complications. I recall in one of my earlier operations the advice given by one of our older physicians to rely on opium and calomel, which I followed, with the result of having on my hands a sufferer from insomnia and chronic constipation after I had discontinued its use; had I not been careful to destroy all prescriptions, I feel certain I would have had more trouble. Another case comes to my mind of a patient who had a section done for some pelvic trouble by a physician who also believed in the opium after-treatment. This patient came under my care later, and confessed that she had often helped herself to a suppository after the doctor had stopped their use. My object in referring to these cases is to show the danger of setting up the morbid craving and its attendant evils with only medicinal doses and in the space of two or three weeks; showing at once the danger a prescription containing an opiate may induce in the hands of a nervous patient who has periodical attacks of pain. Such cases do not always reach the state necessary to require hospital treatment; hence, are often exceedingly vexing to the physician and surrounding friends. A direct accusation to the patient would often fail to bring the results desired, while the friends and relatives cannot always be relied upon for the tact and discretion so necessary. For that reason the physician must often exercise a vast amount of patience and time to educate the ones immediately concerned, and to prove the deleterious effects the use of opiates have, and then, *perhaps*, the patient can be cured.

It may, perhaps, be of interest to quote from a discussion on morphine in the British Gynecological Society, 1889: Dr. Bantock gave as his experience after surgical operation "that patients were much better off without it—they escaped the restlessness which was left as the opium wore off." Dr. Bedford Fenwick called attention to the fact that opium increased the congestion of the kidneys to a dangerous extent, and might even go to a complete suppression of urine; also, that it caused a complete atony or paralysis of the muscular tissue of the intestines, thus preventing their acting. Dr. R. T. Smith had given two doses of a quarter-grain of morphine each in a case of severe shingles; the patient had suppression of urine for twenty-four hours. Dr. Thomas Savage, in his address read at the annual meeting of the Birmingham and Midland Counties Branch of the British Medical Association, says: "It is not long since it was the custom to administer opium and morphine as a routine treatment in all cases of peritonitis and many other conditions in the abdomen. We have now learned the inadvisability of so doing. May we not extend the withholding of these and similar drugs in other states? I have myself thought that the general practitioners rely too much upon anodynes."

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[1] Covering a space of time from six days to five weeks.

In this matter of too sympathetic and assiduous medical treatment errors rather of judgment than intention are often committed.

Of no less importance is the behavior of an opiate on a patient of uric acid diathesis, in which a demand for relief of pain on the part of the patient often becomes quite urgent. Here, again, the researches of Dr. A. Haig show us that the drug tends to store up the acid; that when elimination begins to take place there is often a return of pain, the patient again demanding relief — in this manner a cycle can easily become established. These pictures teach us the importance of keeping the drug *entirely out of the reach of the patient*, and the necessity of its *careful* and *conscientious* use where it may be indicated.

SOME NEW STUDIES OF THE OPIUM DISEASE.

Read before the Philadelphia County Medical Society, January 27, 1892.

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As a preface, I wish to express my emphatic dissent against the common use of the word *habit*, in describing the opium disease. The popular meaning conveyed by this term is some state or condition voluntarily acquired and retained, with the certainty of being thrown off at any time at the will of the patient. This view assumes a knowledge of the physiology and psychology of the brain and its functions that is not yet attained. Hence the use of the word is incorrect, wrong, and contradicted by the facts in the clinical history of each case. It also conveys a false impression of the nature and origin of such cases, and is a word to which different meanings will always be given. No other word is more misleading and confusing, when applied to opium, alcohol, and other border-land neuroses.

Beyond all question, the toxic use of opium and its alkaloids is rapidly increasing. Only about 50 per cent. of opium and morphine manufactured is required by the legitimate demands of medicine and pharmacy. The enormous balance is consumed in some unknown way. Comparative estimates make the number of opium cases in this country over a hundred thousand. Whether this is correct or not, it is evident that the number is very great and largely concealed, and many of them are very hopeless and difficult to treat. The natural history of such cases indicates a steady, progressive degeneration, on to death. Recovery is rarely spontaneous, and without the aid of applied science. Up to the present time, all clinical studies have been confined to the symptoms and treatment, starting from some indefinite point after the opium addiction begins. The old superstition of a moral origin, and of some wilful, wicked impulse, is accepted as the first original cause. Writers, and even specialists, seldom go back into the early etiology, or inquire what conditions or forces led to the first use of opium. The object of this paper is to trace some recent facts which throw new light on this unknown stage of etiology.

From a careful clinical study and grouping of the history of a number of opium cases, it is evident that a large proportion have a distinct *neurotic diathesis*, or, more literally, have inherited from their parents some condition of brain and nerve defect which favors and predisposes to the development of neurotic diseases. A more careful study of these records shows that in some cases an *opium diathesis* is present, or a special inherited tendency to use opium. Here are two conditions which influence and favor this disease. It is a well-known fact, that a large proportion of all nerve and brain diseases appears in children of neurotic and defective parents. Such children have received some special tendency and predisposition favoring the growth of nerve diseases, springing into activity from the slightest causes.

The latency or activity of this diathesis will depend on certain conditions of life and surroundings, which in many cases can be traced. In some instances the diseases of parents reappear in the children, in others in allied diseases, and not infrequently these defects pass over and reappear in the third generation. Often such defects are dormant, and only break out from the application of some peculiar exciting cause. Thus, a hysteric mother and paranoiac father were followed by three children. One was an alcoholic, the second was a wild, impulsive temperance reformer, the third was a sad, depressed, melancholic man. In the third generation opium and alcoholic inebriety, insanity, pauperism, also feebleness of mind and body, appeared. These varied forms of nerve diseases all had a neurotic diathesis as a basis, and the different phases were the direct result of different exciting causes. These facts are numerous and well attested, and so uniform in their operation, that it is entirely within the realm of possibility to predict, from a knowledge of the diseases of the parent and the environment of the child, that certain forms of degeneration and disease will appear with almost astronomical precision. This term neurotic diathesis covers a vast, unknown field of causes, which extend back many generations. The evolution of brain and nerve defects can often be traced through the realms of environment, nutrition, growth and development. Medical text-books and teachings which fail to recognize this, give very narrow conceptions, and strange exaggerations of the influence and force of many insignificant and secondary factors in the production of disease. The opium-taker has often this neurotic element in his history. It may be traced back to his ancestors, or it may be associated with brain or nerve injuries, cell-starvation, faulty nutrition, auto-intoxications, brain strains, or excessive drains of nerve force. A train of predisposing causes may have been gathering for an indefinite time back. Then comes the match which kindles or fires the train of *gathering forces*. This same train of exciting causes may not explode, because the germ soil is absent. Opium in all forms is given daily, and yet only a comparatively small number of cases become addicted to its use. Why should an increasing number of persons take opium continuously for the transient relief it gives? Why should the effects of this drug become so pleasing as to demand its increased use, irrespective of all consequences? The only explanation is the presence of a neurotic diathesis, either inherited or acquired. The existence of a special opium diathesis has been doubted with supercilious contempt by many writers. Any clinical study will show the error of such doubt. The notes of a few cases which have recently come under observation are illustrations by no means uncommon, and indicate the concealed factors of disease in many instances.

In Case 1 the mother was a secret morphine-taker, the father was a hypochondriac and melancholy clergyman. Two children followed, who were highly educated and healthy. One, a boy, became a physician, and at 30 suddenly began to use morphine, and soon became a chronic case. The other, a girl, was well up to her marriage at 24, when she began to use opium, for no apparent reason.

Case 2, reported by the late Dr. Parrish. Both parents used opium for sleep and neuralgia, and died leaving three children under 5 years of age. They were brought up in temperate families, and had no knowledge of the opium addiction of their parents. One, at 20, continued the use of morphine after it had been given for some intestinal trouble. The second child suffered from dysmenorrhœa and began to take morphine for this trouble, and became a morphine maniac. The third child was a druggist, who at 30 was a confirmed opium-taker.

Case 3. Both parents were neurotic, and probably opium-takers. Both died, leaving an infant child, which was excessively irritable and peevish. By accident, morphine was used as a remedy, and from thenceforth the child would become delirious unless morphine was given daily. All efforts to break up its use failed, and for five years increasing doses were used constantly until the child's death.

In Case 4, five children of unknown parentage were all opium-takers; all lived in different conditions and had different occupations. Two began the use of opium from some bowel trouble. Two have been under treatment, and relapsed (?).

The relief which this drug brings on all occasions, and its impulsive use, are unmistakable indications of a distinct opium diathesis. I believe a careful clinical study will reveal many such instances.

There is a large class of opium cases in which a complex diathesis exists—particularly following inebriety and various forms of brain exhaustion. Often alcoholics will use opium irregularly and transmit to their descendants a diathesis which very commonly favors the use of this drug. Thus the alcohol diathesis frequently becomes the opium craze, with but slight exposure. Both of these disorders are rapidly interchangeable. The children of opium-takers may turn to alcohol for relief, and *vice versa*. It is clear that the moderate use of alcohol produces a degree of degeneration that frequently appears in the next generation as predisposing causes to the opium or allied diseases. Clinical study of cases brings ample confirmation of this. The children of both alcohol and opium inebriates display many forms of brain degeneration. The paranoiacs, criminals, prostitutes, paupers, and the army of defects, all build up a diathesis and favoring soil for the opium craze. Descendants from such parents will always be markedly defective. They are noted by brain and nerve instability, hyperæsthesia, and tendency to exhaustion; also extreme pain from every degree of functional disturbance, with low powers of restoration, inability to bear pain, and suffering from mental changeability, impulsiveness and drug credulity, etc.

These characteristics are prominent, and mark a neurosis that quickly merges into the opium disease. Yet a minority of these cases show a sensitiveness in the effects of opium that prevents them from using it. I have seen a neurotic patient become dangerously narcotized by the use of half a grain of solid opium. Some of the alcoholics and other narcomaniacs have exhibited an incompatibility to opium that is often startling. The emesis and prostration, and the brain-stimulation which approaches and becomes hyperæmia from one or more doses, are familiar to all. This intolerance precludes the use of the drug, and is recognized with alarm by the patient. On the other hand, when the effects are rapid and marked, relieving pain or restoring the disturbance of the functions with no other than a pleasing sense of rest and cure, a dangerous diathesis should be suspected. While the physician recognizes the constitutional incompatibility in one case, he ought not to overlook the abnormal attractiveness of the drug in the other. The dose of morphine which gives the first complete rest, or calms the delirious excitement, or relieves the neuralgic pain or the digestive disturbance, soon calls for its repetition, and many physicians will unconsciously sanction and advise its use. Thus, far more fatal conditions are cultivated and roused into activity. In all neurotic cases, the use of opium in any form when given, should be concealed and watched with care. If a special predilection for this drug appears, equal care and skill should be exercised to divert and change it. Opium should only be used from a knowledge of the nature and character of the case. I have seen the most disastrous results from the reckless use of morphine with the needle. Recently, a man to whom morphine was intolerant was cut and stunned by a falling plank in the street. The surgeon gave him a hypodermic of morphine and ordered him to the hospital. He died in a short time from opium neurosis. Police surgeons often make this mistake, giving morphine that from some unknown reason becomes fatal.

There is another class of opium-takers in which abnormal nutrition seems to be the most active factor in the causation. The neurotic or opium diathesis is not apparently present, and opium-taking dates from some nutrient disturbance. Such cases are very commonly sufferers from dyspepsia, derangement of the liver and bowels. They have a deranged appetite, headaches, cramps, thirst, and fever at times, with nausea. They are anæmic and hyperæsthetic, and complain of varied pains and neuralgias. These cases are evidently ill-nourished, and, in all probability, suffer from imperfect digestion, assimilation, and elimination of food products and waste material. Poisonous compounds and auto-intoxications form sources of serious trouble. The brain suffers from fatigue and pain, the cells are imperfectly nourished, and congestions, complex neuralgias, nerve irritation and instability follow. For this condition opium is almost a specific paralyzant. These cases are found among the over-fed, and those who neglect common hygienic rules of living. Cases of the over-fed are usually epicures, gormands, and persons living sedentary lives, and eating at all times and places. Dyspepsia and derangement of the bowels and kidneys make them drug-takers; then follows opium in some form. Defective elimination and auto-intoxications are always present. The under-fed are usually misers, or persons very poor and very neglectful of themselves, or paranoiacs who have some food delusion. They are practically suffering from cell and tissue starvation and nutrient debility. The same dyspepsia and bowel derangements follow. Then follows drug-taking or special foods, and soon opium is discovered and adopted as a remedy. The same poisonous waste products appear from deranged assimilation; also, elimination and the nerve centres are deranged by these new and dangerous chemical compounds. The class of persons who, from simple neglect, become diseased, are often the very poor and ignorant, or some division of the great army of borderliners, who live both mentally and physically on the very frontiers of sanity and insanity. Such persons clearly suffer from many and various forms of autointoxications, and this is proven inductively by the result of eliminative treatment. In all of these cases of nutrient neglect, many favoring conditions encourage the use of opium. These cases are numerous and comprise a large part of the invalids, hypochondriacs, and chronic drug-takers who are seen in our offices and at the dispensaries. They are all practically suffering from faulty assimilations, and faulty eliminations and the irritation of retained poisonous compounds. Opium is a remedy of positive force in covering up the protests of the defective cells and irritable nerves. Often these cases are concealed and are partly the result of previous disorder, and partially acquired from the effects of opium.

Next to this class of nutrient sufferers who become opium-takers, are those who have some entailment of disease or injury. In their history it will appear that some stage of invalidism was present, dating from brain, nerve, or bodily injury. Fevers, heat, or sunstrokes, brain shocks from any source which are followed by unconsciousness, or marked mental perturbations, with exhaustion, and also a profound lowering of all the vital forces. These and other events have left damaged functional and organic activities, manifest in various neuralgias and physical disturbances.

The use of opium conceals and covers up this trouble. Many veterans of the late war have become opium maniacs for the relief of their pains and sufferings, and this is often concealed where it might possibly peril the procuring of a pension. The pension bureau should recognize the use of opium as a natural sequence and entailment following the disease and injury in the service. In Prussia both alcohol and opium inebriety are treated as diseases when occurring in the army or civil service. The suffering and hardships growing out of the war has been the exciting cause of a great many opium cases. Many persons who have no special nerve diathesis in their history, after some severe illness, injury or mental strain exhibit a degree of nerve instability and feebleness that is significant of serious organic change. Such persons manifest perversions of taste, with delusions of foods and medicines, and are on the borderlines of narcomania, ready to use any food or drugs which will bring even transient relief. The use of opium is always perilous. Why all these and similar cases do not become opium takers, is owing to the absence of some diathesis inherited or acquired.

We can see some of the many complex causes favoring brain and nerve strain, with rapid exhaustion and degeneration, and the interchangeability of nerve diseases, in which the use of opium is only another form of the same disease. But we cannot yet trace the early causes and cell-conditions which develop the opium craze. This morbid impulse, like the delirious thirst for water on a desert plain, completely dominates all reason and so-called will-power, and every consideration of life and surroundings. It is more than an accident, more than a failure to reason and act wisely; it is a disease, an organized march of dissolution. The demand for opium is only a symptom; the removal of opium is not the cure. Some central brain degeneration has begun and is going on. Narcomania, a morbid thirst for any solids or fluids that will produce neuroses, is the general name, and opium mania is only one member of this family.

In this study the fact is emphasized that the opium disease appears most frequently in persons who have a neurotic and opium diathesis, also in persons who are suffering from nutrient disturbances, and those who are invalids or have entailment of previous disease and injury; also that certain diseases and symptoms seem to furnish favoring soils for its growth and development. While these are but faint outlines of many unknown facts, they are urged as starting-points from which to base other and more accurate studies. The medical treatment from this point of view is very suggestive. Obviously the removal of the opium is not the cure. The various methods of removal detailed with great exactness, as if they would apply to each case, are unfortunate reflections of the failure of the writers, and are based on the assumption that all cases are the same, and the removal of opium is the great essential in the treatment. Basing the treatment on the clinical study of the case, it will be evident that where an opium diathesis exists, the withdrawal of opium should be very gradual. The treatment and surroundings should be arranged with great care and exactness. Such persons should live in an institution for years or be under constant medical care. The danger of relapse and the future of such cases will depend entirely on the conditions of life and surroundings. Rapid reduction and heroic treatment is never permanent, even with the consent of the patient. Specifics, faith cures, or any measures that promise speedy cure, are failures from the beginning. The road back to approximate health is straight and narrow, and only along lines of applied science. Where the history of a *neurotic diathesis* is present, the withdrawal of the opium should be equally slow.

More attention must be paid to the brain and nerve nutrition. The removal of opium may be followed by the appearance of very serious disorders, such as epilepsy, hysteria, complex neuralgias and paranoiac phases, alcoholism, and various other neuroses. The slow withdrawal of opium enables one to discover and anticipate these neurotic troubles which have been masked before. In one case, suicidal melancholy; in another, in hyperæmia of the brain, with delusions; in the third, irritation and delirium; in the fourth, hysterical spasms appeared when the opium was removed. I have seen two cases of general paralysis suddenly spring into great activity, after the opium was taken away. This condition was not suspected before. Alcoholism is a very common sequel after the removal of the opium. *Cocaine, chloral*, and almost every drug that has narcotic properties are also very common entailments. While these are extreme cases, they are likely to be formed at any time. Great care should be exercised in using other narcotics to lessen the irritation from the withdrawal of this drug. Foods and tonics should be given. These cases require the same general treatment as neurasthenia and other states of brain exhaustion. They are drug-takers and will resort to anything for relief. They are secretive, and require more care and more mental remedies, with long, exact hygienic surroundings.

Where the opium addiction has apparently come from bad nutrition and faulty elimination, with auto-intoxication, the treatment is very hopeful. A long preliminary course of baths, mineral waters, and tonics should precede the removal of opium. Then the opium may be removed at once, without the knowledge of the patient. In proper surroundings with frequent baths, little danger of relapse or suffering will follow. Careful study and treatment of nutrition and digestion will fully restore the case, and relapse seldom occurs except from failure or neglect of the surroundings.

In the last class, where opium is taken and apparently follows from the entailment of some injury or disease, or the exhaustion of old age, a preliminary treatment seems to be required. Often the opium can be abandoned at once for some milder narcotic, and from this, by gradations, discontinued entirely. Full knowledge of the diseased states present will always suggest the lines of treatment. In some cases the opium should not be removed; its diminution and concealment is required. In others its rapid removal is essential. Many varied and difficult questions will appear in these cases. The more accurately the diseased states, also predisposing and exciting causes, the diathesis, and varied influences which have caused opium to be used, are studied, the more accurate the treatment. As in many other diseases, the causes may be anticipated, also neutralized and prevented. Opium-taking should be seen as a symptom; remove or break up the cause, and this symptom disappears.

Routine treatment, either by slow or rapid reduction of the opium, is not wise. The substitution of other narcotics is equally unwise. In a certain number of cases the withdrawal of opium only unmasks more serious diseases, and is positively wrong. A case of general paresis is now under treatment for the opium addiction. Before this opium addiction began the patient caused great distress by his delusions and extravagantly strange conduct. This treatment is wrong. A rheumatic woman of seventy is going through the same course to be free from opium, which has made life tolerable for ten years past. The treatment of opium mania is something more than the application of means and remedies for withdrawal of the drug with the least suffering. The symptomatology and organic lesions often date back to other causes more complex than opium. The treatment must begin by their removal. The general or special diathesis must be treated; the nutritive disorders, intoxications and starvations must be recognized and removed. The influence of pathological states from previous disease and injury must be ascertained and treated. The power of environment, climate, occupation, and idiosyncrasies are also powerful factors to be considered.

These are the essential facts and conditions which must enter into the practical treatment. Among the many important problems, that of prevention promises the greatest possibilities. A recognition of the neurotic diathesis and other predisposing causes would enable the physician to successfully guard its approach.

The successful *stamping* out of both this and the alcoholic disease will be a reality in the future.

It is evident that the opium disease is still an undiscovered country, and the few student experts have not yet passed beyond its frontiers. This disease is all about us and may invade our homes and firesides any time, and *hence* demands recognition and most careful study; above all, ethical and moral levels. Its laws of growth, development, treatment, and curability all follow the great highway of evolution and dissolution.

DISCUSSION.

Dr. Thomas J. Mays: This theme has been one of intense interest to me, but I do not feel prepared to discuss the subject. There is, however, one point to which I should like to refer, and that is the relation between opium-taking and pulmonary consumption. We know that there is a strong affinity between alcoholism and consumption, and I would ask Dr. Crothers whether he has observed a similar relation between opium-taking and pulmonary consumption.

Dr. Joseph Hoffman: Looking at this subject from the medical side, I would say that I have taken some trouble to ascertain the frequency with which opium is prescribed by the general practitioner. The ordinary prescription-file of the drug stores will show that three out of five of the prescriptions contain opium in some form or other, and I think that more than a little of the responsibility for opium-eating lies at the physician's door. It is prescribed without any attempt at cure, for opium has few curative effects, especially in acute disease.

The question arises, When shall opium be used in surgical work? In shock opium will not effect a cure, except in so far as it relieves pain, and if pain is the only thing to be remedied, often we have the remedy in opium. In cases where the pain is self-limited there is a great divergence of opinion as to whether opium should be used or not. In abdominal surgery we must refuse to use it. In these cases opium, instead of being beneficial, is harmful. Although it lulls pain, it produces much after-discomfort. There may be cases in which you cannot do without it; these are the undiscovered cases of opium-eating. In these cases the surgeon has to choose the lesser of two evils. Opium is injurious not only from its physical effect, but also from its moral influence. Take a patient broken-down with pain, add the pain of operation, and give a drug which destroys the power of self-control, and you introduce a semi-hysterical element which causes unending trouble.

In surgery there are better anodynes than opium. I have found the hydro-bromate of hyoscine to be preferable; it does not cause constipation, and thereby increase the tympany, as does opium; its only bad effect is to diminish secretion. By avoiding the use of opium we secure benefit by toning up the patient. In shock, strychnine will at once put the patient to the point of enduring pain without any subsequent discomfort.

Dr. M. Price: The responsibility of the opium habit can, I think, be referred directly back to the physician. He begins by relieving the pain, and not only does so, but tells the patient what he is using for that purpose. I cannot speak in regard to the neurotic diathesis, but some of the best developed, and apparently best balanced, patients that I have had, so far as external appearances were concerned, were addicted to the opium habit, and some of them are still addicted to it. If the physician is forced to give opium, he should give it secretly.

As has been said, opium, by its stupefying influence upon the nervous system, covers up and masks the symptoms. The physician also is lulled into a feeling of security, and does not recognize the destructive changes that are taking place, and is only awakened when he finds his patient absolutely dying. I have seen cases of appendicitis where the physician thought that the patient was improving, and yet the abdomen was full of pus and the patient dying. The opium had not only quieted the patient, but also lulled the doctor into a feeling of security. Not only in appendicitis, but in other surgical conditions, where the pain and discomfort is so great as to call for the use of opium, something should be done instead of giving opium, unless the patient is past relief; there opium is proper enough. In abdominal surgery we have come to the firm conviction that opium is uncalled for except where the opium habit has been established.

Dr. J. P. Crozer Griffith: I stand here to-night feeling somewhat alone, since I intend to take issue in some respects with what has already been said in the discussion, and to consider the matter from the standpoint of the physician, rather than that of the surgeon. I agree fully with nearly all that was told us in the papers of the evening regarding the dangers of opium, and assent as well to the statements of Drs. Price and Hoffman, that in nearly every case of the opium habit the physician is probably responsible. At the same time, one cannot but be impressed with the feeling that one of the laity, strolling in here to-night, would leave with the thought that opium is an unmitigated evil, a drug which should never be employed under any circumstances whatever, inasmuch as it never did anything but harm. Every unprejudiced physician can only regard this as radically wrong. I say it after mature deliberation, and not on the spur of the moment, but still I say it, that were I compelled to select one drug from the entire list in the Pharmacopœia, and confine myself to its use alone, I would unhesitatingly choose opium. And though in this I am at variance with what we so often hear uttered in discussions in this Society, yet I trust I am not an antiquated fogy, and I know I try to keep abreast of the times. It has been urged that opium rarely cures disease, but only relieves symptoms, at the same time that it disguises them. I should like to inquire how many drugs in the Pharmacopœia really cure; certainly there are very few. As educated physicians, we hesitate to say that we have *cured* our patients. All that we expect to do is to guide our patients to recovery. I have no reference in this connection to the employment of surgical interference. Were it true that opium never had any powers but those of relief, there would, therefore, be no objection to its use on this score. Well aware of the dangers of the opium habit, I would hesitate long before beginning the employment of the drug in cases which were certain to run a somewhat chronic course, yet in which there was hope of recovery. Dujardin-Beaumetz has made the statement that thirty days' continuous use of opium will make an habitué of any one. In the light of what has been said in the latter of the two papers of the evening, this is perhaps an overstatement. It at least expresses the opinion of an excellent French authority.

There are cases in which the greatest fanatic will probably admit that it is our duty to administer opium in some form. Among these are hopeless cases of cancer. It is true that the drug gradually loses its effect, and that the dose must constantly be increased. But in no other way can existence be made even tolerable. I believe, too, that it is almost a sin to omit the employment of opium in the last stages of many cases of phthisis. The statement has been made in text-books that opium is poison to patients with phthisis. While this may be true in theory, it is eminently untrue in practice. Of course, I have no reference to phthisis in the early stage. There is no question that in this stage we should defer employing it, trying other measures for relief, and devoting our attention to the cure of the disease.

While it is true that opium may occasionally cause—perhaps it is better to say *be followed by*—suppression of urine, dyspnœa, and other unpleasant and dangerous symptoms, we should not totally abandon its employment on this account. I have a patient in whom five drops of tincture of nux vomica is always followed by unpleasant evidences of the physiological action of strychnine, but I shall not on that account refuse to give nux vomica in other cases. I have seen retention of urine follow the application of turpentine stupes, but shall not for that reason abandon their use. So numerous drug-idiosyncrasies exist that the man who inordinately fears them will never give anything, and had better retire from the profession.

As there are a number of gynecologists present, I am ready to admit at once that I understand very little about abdominal surgery. But as a physician it is my duty to have some opinions about peritonitis. In former years, before the diagnosis of pathological conditions of the abdomen had so degenerated that it became necessary to cut the patient open in order to discover what was the matter, there were physicians who possessed sufficient diagnostic acumen to recognize peritonitis without this interior inspection. Dr. Alonzo Clark was one of these. Unfortunately for him, he died before he had the full opportunity of learning from the later lights concerning the avoidance of opium in peritonitis and the proper treatment of the affection, and he claimed that in some way it was partially curative. It was his custom to administer opium in very large doses in this disease. Doubtless it was very stupid of him to persist in this practice, but strange to say his cases recovered. It may, after all, not appear so strange when we call to mind that the use of depletives in peritonitis, including laxatives in some cases, had been in vogue up to that time, and with results far inferior to those of Dr. Clark's. For my own part, I have yet to hear of any method of treatment which supersedes the administration of opium in this affection—not as a calmative agent, but as a curative one as well. Of course, there are cases in which every physician would counsel operation; but this is in no wise a sanction to indiscriminate laparotomy.

With regard to what has been said about opium in peritonitis beguiling the physician into a sense of false security, it is, of course, necessary that the attendant should have his wits about him, and realize that the drug is liable to disguise the symptoms by relieving pain. I think, however, that there are other factors than the sensation of pain to indicate the existence of danger-signals.

Then, again, we must not forget that it is often impossible to obtain consent for an operation, however desirable this procedure may appear. In such cases we wish to be familiar with some method of treatment other than the employment of the knife. We shall sometimes be surprised by the recovery under the administration of opium of cases which we had deemed hopeless without operation.

Dr. W. M. Capp: It is to be remembered that the physician is often hurriedly summoned to patients with acute symptoms and in great suffering, and it is from these that relief is sought. Generally speaking, it is well to say that we should sit down and study the case, to discover the cause of the suffering, and remove it, so that relief will naturally follow; but practically something more speedy is demanded, and a narcotic may be useful to tide the patient over what would otherwise be a critical period of suffering.

Dr. Crothers' paper was very interesting, but I do not know that we can agree with him in substituting the word disease for the word habit in all cases of opium addiction. I think that in many cases the use of opium is simply a habit, in no respect different from the alcohol or the tobacco habit. There are some persons with such weak will-power that they go through life, dominated by a habit of some kind. The remark that the physician is largely responsible for the prevalence of the *improper* use of opium is rather too general. It is too sweeping an assertion to say that the physicians are responsible in all cases. It has also been intimated that from the frequency with which opium is prescribed we can easily account for the large quantity which is imported. This is too broad a statement to eminate from a society of this kind. Let me refer to one single fact. It is generally known that almost all patent medicines contain opium, and that there is no country in which so large a quantity of these nostrums is consumed. In their manufacture a large quantity of this drug is used, and it is but a short step from the use of narcotic patent medicines to the direct use of opium. There are many ways other than by the prescriptions of physicians, by which people become addicted to the use of opium.

Dr. Edward Jackson: The power of opium to cover up symptoms has been mentioned. This is something more than the power to prevent pain by an action on the peripheral nerves or on the centres themselves. I have seen this illustrated in some cases of insufficiency of the eye muscles. I have one patient with hyperphoria of six centrads, who has suffered much from headache and other effects of the eye-strain. If she takes three-fourths of a grain of opium, the hyperphoria entirely disappears. She is not hysterical and is not an opium habitué; she goes many weeks and even months without a single dose. For several hours after taking the opium the conditions of nervous action are so radically changed that the hyperphoria no longer exists, so far as we can in any way discover it. My attention was called to a similar case by my friend, Dr. Charles H. Thomas. In these cases there is certainly some peculiar effect on the co-ordination of nerve impulses, so that both the pain and also its cause are for the time removed.

In regard to the lessened importation of opium, it occurred to me that this might be connected with the introduction of hyosine and some of the coal-tar derivatives, and their wide use by both the profession and laity; also with the attack led by the abdominal surgeons on the use of opium in what was formerly regarded as its peculiar province, the abdominal inflammations.

Dr. William H. Welch: A celebrated physician of this city once said he could count on the fingers of one hand all the drugs that he had found of real use in his practice, and he would place opium at the head of the list. Now I feel very much the same way. Of course, I recognize the fact that opium, like alcohol, is greatly abused; but I would not be willing to give up either on that account. I have met with a number of persons who have become habituated to the use of opium, but I have seen only one case in which I have aided in breaking off the use of the drug. This patient was a nurse, who had contracted the habit voluntarily. He began the use of morphine to induce sleep, after having met with a bereavement in his family. I think he also suffered from neuralgia. He gradually increased the dose up to two grains a day. After continuing this for two years he decided to give it up, and so he gradually diminished the daily dose for four days, when he discontinued it entirely. To relieve the pain in his extremities, he took antipyrine and also bromide of sodium to promote sleep. After abstaining from its use for several months he went on a visit to New York, and while there was taken with cholera morbus. He applied to the nearest drug-store for relief, and the druggist gave him a mixture containing opium in some form. From this time he returned to the use of morphine, and soon reached a daily dose of four grains. After continuing the use of the drug now for two years longer, he again resolved to break off the habit, and this time placed himself under my care. It is unnecessary to recite in detail the symptoms that followed, but the extreme muscular weakness was very surprising, especially when we consider that the daily dose was only four grains. In a few days after discontinuing the drug he became absolutely helpless; he could not feed himself, and could not hold in his hand even a glass of water. He became delirious. In the course of two weeks he began to improve, but it was three weeks before he was able to resume his duties. I should add that he took bromide of sodium very freely, and some critics have suggested that the extreme muscular weakness may have been due to this drug. He, however, showed the weakness before the bromide was taken. He took as much as two hundred and forty grains of the bromide daily for several days. I know nothing of his family history, but so far as the individual himself is concerned, there appears to be no neurotic element in the case. It has now been two years since he stopped the drug, and he tells me he has not returned to its use. But these people often practice so much deception that I cannot be absolutely sure on this point.

Dr. T. B. Schneidemann: I recall a valuable little book, now out of print, by Professor Fiske, of Harvard, on alcohol and tobacco. The title-page bears the legends, "1. It Does Pay to Smoke." "2. The Coming Man will Drink Wine." The author is at some pains to define the difference between a stimulant dose and a narcotic dose, the former being such an amount as nourishes or facilitates the normal nutrition of the nervous system, restoring its equilibrium, enabling it with diminished effort to discharge its natural functions. Such a dose, moreover, has no evil after-effect—"reaction"—which belongs only to a narcotic dose, the term over-stimulation being a misnomer, and imported into physiology from *à priori* reasoning. As a stimulant, he declares that these substances diminish the friction of life, and are useful adjuncts to civilization, and that the dose does not have to be increased, and that their use may be dispensed with at any time without exciting morbid craving. Fiske's views are essentially those of Anstie.

Dr. T. Ridgway Barker: There is one point in Dr. Crothers' paper that impressed me, and that is the importance of hereditary predisposition. This belongs to what is the interchangeable neuroses. If the histories of cases are more carefully examined, we shall find that inherited tendencies have a great deal to do with the use of narcotics and stimulants.

I think the physician should not wholly escape from the charge of too frequently prescribing morphine and other narcotics. It is not uncommon in cases associated with pain for the physician to take from his hypodermatic case tablets of morphine, and instruct the patient to take one every hour or so, according to circumstances. The patient is aware of the nature of the drug and may acquire the habit.

In cases of post-partum hæmorrhage one-drachm doses of tincture of opium certainly have a happy effect. Even where the patient is almost exsanguined, she may recover.

I was glad to hear the recommendation of Dr. Crothers in regard to the gradual diminution of the dose, thus disturbing less markedly the nervous system.

Dr. Hoffman: Very little weight can be attached to the recommendation or argument that certain men used opium twenty or twenty-five years ago with good results. There is no doubt that in certain acute painful diseases opium is indicated, as in rheumatism, the passage of a stone, and in neuralgia. When the surgeon talks about peritonitis, he talks about something that he knows, while the general practitioner talks about something he imagines. Nine-tenths of the cases of so-called peritonitis are not peritonitis at all. When the abdominal surgeon opens the abdomen, he makes a peritonitis, for the reparation is due to inflammation. In these cases, no matter how great the swelling and pain, it passes away under the use of salines or calomel. I think that here we have the vantage ground of the argument, for we know what we have done, and we have the results.

Dr. M. Price: I should like to call attention to the statement in regard to the general practitioner and peritonitis. When the physician gets a case of peritonitis that he thinks is going to die, he refers it to the surgeon. The very men who are boasting of their twenty or thirty cures of peritonitis are the men who are referring to the surgeon their fatal cases with quarts of pus in the abdomen. When we cure from 93 to 97 per cent. of the cases that they give up, I think that we have the best of the argument. A case was recently reported from Buffalo of a girl ten years of age treated with morphine for fourteen days, the daily dose finally reaching twenty-five grains. The temperature had disappeared five days before this dose was reached. They then gave her a saline; they had given salines before, but the child vomited it. I cannot understand such peritonitis. Here must be some neuralgic or nervous condition mistaken for peritonitis.

Dr. Werner: The remarks of Dr. Crothers seem to reinforce my position, that when indicated opium should be given with great care, and in such a way that the patient does not know that he is taking opium. Some years ago I was called to see a child one month old. I found it in convulsions, with contracted pupils; the child had previously been well. I asked if they had given it any medicine. They at first denied that they had, but subsequently admitted that a neighbor had given the child a dose of medicine for colic. The child died in less than twenty-four hours, and subsequent investigation showed that it had received an eighth of a grain of morphine.

Another case that I recall is that of a young girl of strumous diathesis, who had been treated for various troubles, and finally, going to a gynecologist, a stem pessary was introduced. She came to me, I removed the pessary, and found the uterus and broad ligaments swollen and extremely sensitive; there was menstrual pain. She was placed at rest, with suitable treatment, and improved. Being a working girl, she is compelled to be much on her feet, and soon all the old pains returned. I told her that if she could rest she might be made comfortable, but that otherwise it would be necessary to remove the diseased appendages. She refused operation, and the last time I saw her she told me that a friend promised to give her some powders, which she thought contained morphine. I explained the dangers to her, but in spite of that she is taking the morphine. I do not know what the result will be.

These cases are sufficient to show the necessity of calling a halt. Prescriptions should not be allowed to be renewed at random. The cases for the use of opium are rare, and should be carefully selected, and the physician should give the dose himself.

I fully agree with the remarks made by Drs. Price and Hoffman regarding the use of opium in abdominal work, and feel certain that many lives are saved by having given up its use; it has certainly often lulled both patient and physician into a dangerous feeling of security until it was too late. I recall one case of septic peritonitis which I saw in consultation. Although the patient was comfortable after calomel and salines, I knew from the pulse and temperature that there was pus, and suggested operation. The family physician refused operation unless I could show him that pus was present. I agreed to remain in attendance, provided opium was not given. On Wednesday he gave the first dose of opium, for what reason I do not know; there was no pain, and there were daily movements. After the opium, distention of the abdomen occurred, and death the following Sunday. In these days, when we are trying to have cleanliness in everything, why should we shrink from giving salines and cleaning the bowel of any foul material? Why should we block the bowels with opium when we know that the products are reabsorbed? These are questions which I should be glad to have answered from the other side.

Dr. Crothers, of Hartford, Conn.: The interest which this subject has excited is very pleasing to me. The point which I tried to make clear is that these are neurotic cases, either acquired or inherited, and that we should treat them as such, and bear this fact in mind in our use of opium. If we have a neurotic case, we should remember this predilection to the opium habit.

Dr. Mays was among the pioneers who exemplified the close connection between alcoholism and consumption, and between opium-taking and consumption. Phthisis, alcoholism, opium-taking, and a host of other affections, are neurotic conditions, and interchangeable one with the other.

I have strongly objected to the word habit, because its xact meaning is not understood. We use the word in its mmon sense, and not in its scientific sense.

There are many reasons for the discrepancy between the antity of opium imported and the quantity used legitimately. It shows that opium-taking is increasing, and that opium is used in various secretive ways.

I think that there are no physicians in general practice who will regard opium as a bad remedy. I think that the statement that it is one of our chief remedies will be confirmed by all. It is, however, clear that it should be given with great caution, and its use concealed from the patient's knowledge. We cannot dispense with it under any circumstances. My principal point has been to call attention to the neurotic character of these cases, and not to disparage the use of opium.

With regard to the treatment of opium cases, we come to a wide field which the general practitioner is not quite ready to enter. The routine treatment of diminishing the quantity of opium as the only plan of cure employed must be abandoned. Opium must be retained or diminished according to the case. In some cases it would shorten life if the opium were diminished. In the large proportion of cases, however, the opium can be removed. The routine plan of diminishing the opium gradually or rapidly is largely empirical. No one should undertake the opium treatment without knowing the diathesis and condition of his case, and then the question of the removal or diminution of the opium becomes clear, and the result satisfactory.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(*Continued from page 201.*)

Dr. Von Raitz: I have nothing to say about treating the stomach with electricity. Einhorn uses about the same apparatus as Dr. Wolff, but uses a current with slow interruption, and as far as washing out is concerned, he does that before. If a person does not retain his food very well there is irritation of the stomach, and he has to vomit, and then he considers there is inflammation of the stomach. He uses galvanism and the negative pole. In another class of cases he gives food at night and prevents hydrochloric acid from attacking the stomach at night.

Dr. Morton: These two papers need more discussion than we can possibly give them to-day, but we appreciate them greatly. I have used about the same tubes making different attachments, first one and then another, and I like Dr. Stockton's very much.

I think more attention in both papers might be given to the exact character of the current they have been using. Dr. Stockton says he applied both the continuous and interrupted or faradic current. There is a vast range between the interrupted galvanic current and the faradic, and I would have been glad to have had something specific in that respect, and I shall read their papers carefully so as to get at the exact current they have been using.

Dr. Massey: These papers are extremely interesting to me. In 1886, in an idle moment I conceived it would be possible to get up an electrode like a pill so that it could be fastened to a string and swallowed by the patient, and I had Mr. Fleming make me one, which I show to you. The bulb consists of a rubber cage to hold absorbent cotton, and the cord terminates inside with a metallic end. In handling it, I found that a safe attachment was important, and that a knot was better than a metallic fastener. I have, unfortunately, never been able to get any one to swallow it, and after reading the valuable remarks of Dr. Stockton in a medical journal some time ago, I took it out of the drawer and examined it. I had two sizes, as you see, and they represent a method of making a movable electrode for the stomach, if you can get any one to swallow them. I tried it on a patient recently, and on his refusal to swallow, made it stiff by putting a tubing over it, by this means getting it down, but I could not keep it there, as the patient was not accustomed to irritating substances or lavage. I think this apparatus is theoretically beautiful, but it will have to pale after the more practical apparatus shown by the doctor.

Dr. Goelet: I desire to ask a question as to the necessity for so much stress being put upon the insulation for the faradic current, as it seems to me any metallic surface would do, as it would be distributed better in the stomach. Of course, in galvanism insulation would be necessary.

Dr. Stockton: I feel tempted to say a great deal more than perhaps I should, as I have left a great many things unsaid. I did not put my remarks in even, but it will be impossible for me to correct that now, and I will ask the gentlemen to read my paper which has been given to the secretary.

Dr. Wolff's paper and my own agree. I was prepared for this, for I have read the doctor's papers on this subject. Before discussing the doctor's paper, I would like to answer in regard to the currents employed. First, I always advise the use of the faradic current in conditions of diminished peristalsis, with the exception of those cases previously spoken of, and in a strength sufficient to produce contraction when it does not give pain, and there is a valuable point as to the insulation with rubber. It is found impossible to get sufficient contraction with metal uncovered even with the faradic current without great pain, and provided the current is diffused through the stomach, you can do so without much pain, and I have proven this many times by pushing the wire down too far, and having got a spasm of pain in the stomach if the stomach contracts directly on the tip. As to the continuous current, I more often employ it in other conditions than that of mere failure of peristalsis. I have had a somewhat different experience from that of Dr. Wolff as regards the use of the continuous current in the treatment of neuralgias. In true neuralgias I get great benefit from the continuous current, and I use the anode internally with the strength never over 20 milliampères, and 10 milliampères is usually sufficient with large sponge electrodes externally, well wet with saline solutions, and I have seen great benefit where there is deficient digestive strength, as I have proved by examination. I find good results after using the continuous current, and often with the faradic, but not so satisfactory. After introducing the electrode and applying the continuous current, and then removing the alkaline fluid put in and then put in water, you will find hydrochloric acid. I think there is no doubt about this, as I have made the experiment many times.

In speaking of Dr. Wolff's paper, I constructed an electrode like his in 1887, and discontinued it for the reason that it required the removal of the stomach tube; otherwise it is quite as satisfactory, as you can apply the current the same; but as it seems best to remove the contents of the stomach first and the saline fluid afterwards, and to study the contents of the stomach, my apparatus avoids the removal of the tubes so often.

The president's experience is new to me. I never had any experience that way. I have used the saline fluid in the stomach tube, and used a wire through it, and then I gradually led up to this instrument which I show you, and it has proved very satisfactory to me. I have constructed one five feet long, doing away with the clamp, and you can introduce that, but it takes a long time, and it is not necessary.

Dr. Wolff: In reply to Dr. Massey, I see an objection to the mandrel, that it might be left behind. I do not know how to remedy it, but this mishap has never befallen me.

In answer to Dr. Stockton, I would say that I can confirm almost everything that he has said with the exception of the use of galvanism as applied to the stomach. When I said I could not detect any increase of hydrochloric acid, it was by the external use of a galvanic current, and I still believe that the galvanic poles, externally, do not influence in any way the secretion of the glands, but when applied internally they will produce a greater secretion of the peptic glands. I think the direct stimulation by galvanism or faradism will stimulate them to a greater degree than anything else. I have never used saline solutions; they are disagreeable to take, and they produce an inclination to emesis, which is also done by electric stimulation. There is a great deal of hydrochloric acid thrown out, and as there are no better conductors than acids, we do not need to add salines.

As to the use of the faradic current, we fully agree as to its great utility where atony of the muscular fibers of the stomach is found. I thank the gentlemen very much for their kind consideration.

AFTERNOON SESSION—September 26, 1891.

Meeting called to order at 3 P.M., with President Massey in the chair.

Dr. Bigelow: I move that the Executive Council have the transactions prepared and printed, and sent to all the medical journals desiring them, and that the permanent form of the proceedings be preserved for printing when necessary, and that the members look after the publication of their own papers.

Seconded, carried, and so ordered.

Dr. Morton: In behalf of the visiting members, strangers to you, I arise to thank you for your cordial greeting. We go home feeling a new impetus to our studies and to our work, and we owe a great deal of it to the manner in which you have promoted this Association, in this, its first meeting. The birth of every new enterprise has always a certain interest, and the beginnings and interest of this meeting will probably never leave the minds of the participants. As it is the first meeting, I say, Mr. President and brother physicians, we thank you collectively, we thank you individually, we thank you with warm hearts for the cordial and kind manner in which you have greeted us, and much of the success is due to the manner of presiding and the President's smooth working; and I thank the Secretary for his hard and quiet labor, often into the night hours; and I thank Dr. Bigelow, for to his personal efforts are due much of the success we have had. Thanking you, Mr. President and the people of Philadelphia, in the name of the strangers present, we go home with a feeling of warm gratitude, and I move that a vote of thanks be incorporated.

So ordered.

Dr. Massey: I am sure that we all receive the words which have been spoken with much feeling.

Horatio R. Bigelow, M.D., read a paper entitled

ALTERNATIVE CURRENTS.

Mons. D'Arsonval, Professor of the College of France and Vice-President of the Societi Francaise D'Electrotherapie, has presented two ingenious and scholarly papers to this society, which will be found in the May and June numbers of the *Revue Internationale D'Electrotherapie*, and which I propose reviewing in thesis. The physiological effects (excitation of nerves and muscles) which are obtained from electricity seem to be, *a priori*, very different according to the service generating the current. These differences, according to Mons. D'Arsonval, are due simply to the physical form of the electric wave, or the characteristic of the excitation. This question was discussed at the International Commission of Electro-Physiology in 1881, the Professor being the Secretary of the Commission. The members were Messieurs D'Arsonval, E. DuBois Reymond, Christiain, Gariel, Helmholtz, Tonbert, Zipmann, Marcel, Deprez, Moscart, Rossetti, Terquem, von Ziemssen. A few days after the adjournment of the commission, M. D'Arsonval believed that he had invented a machine capable of registering automatically the curve of excitation. This being submitted to Helmholtz and DuBois Reymond, they replied that there could be no theoretic objection to it, and that it should be given a trial. This method allows us to trace out upon a special cylinder the curve or characteristic of excitation, and just below it, on the same cylinder, the muscular contraction provoked by the excitation. The characteristic of excitation is a function of three variants—the *potential*, the *time*, and the *quantity* of *electricity*. The curve might be represented by carrying the time upon the axis of x, and the potential upon that of y. The curve would then give the variations of the potential in function of time, which is the chief element in the study of electric excitation. The quantity of electricity is determined, either from a knowledge of the total resistance of the circuit, or by the interposition in the circuit of a condenser of a known capacity. The salient feature in the process of M. D'Arsonval is the employment of a liquid resistance on the one hand, and on the other a variation of potential by the mechanical displacement of a conductor moving in the column of liquid. In this way the variation of potential is continuous, and the law of this variation is identically the same as that of the movement. In modifying the movement we modify the variation of potential, or the characteristic of excitation. Not only is the form of the curve known to us at each moment, but we can modify this form at will. M. D'Arsonval devised an instrument as follows: A constant pile with a homogenous liquid (sulphate of copper or mercury); one of the poles of the pile is grounded; we can then vary the potential from zero to maximum at will; a conductor insulated to a certain distance is so attached that it can rise and fall in the liquid column, and can thus also vary its potential from zero to maximum. The potential of the conductor is proportional to its distance from the bottom of the liquid. This conductor is attached to a movable lever; the other extremity of the lever traces the curve upon a cylinder, which is the variation of potential of the plunges in the liquid. By bringing a portion of a nerve into the circuit the muscle supplied by it may be excited by moving the plunges, and its contractions will also be inscribed upon the cylinder, so that we have two tracings, one showing the characteristics of excitation, the *cause*, the other giving the muscular contraction, or the *effect*. A condenser may be interposed, or the primary wire of an inductive coil, the secondary current being used to excite the muscle. In this case the muscle will receive electricity during the movement of the plunges only. By attaching the plunger to the arm of an electro-diapason we have a variation of current known as sirrus-sördale. To get the alternating current it is only necessary to intercalate an induction coil. These alternating currents have the immense advantage of not fatiguing the part to which applied. A nerve is extremely sensitive to the rapidity of the variations of potential, and the smaller the angle which the origin of the curve or characteristic makes with the axis of y, and the less spread out that the characteristic is upon the axis of x, the greater will be the excitation. For muscles, just the reverse obtains, the muscle being a better conductor than the nerve. In the muscle, as in the nerve, it is the change of potential between points which seems to be the chief cause of excitation, the only difference being that the interruption must be more rapid for the nerve than for the muscle. So it happens that in prolonging the duration of a discharge we may reach a point where the nerve is scarcely excited at all, while on the other hand the muscle is strongly agitated.

This is why the "break" of an inductive current excites he nerve, while the closing of the current of the pile (a much longer discharge) excites the muscle. This being so, n prolonging the duration of the current of induction, in order to have quantity, we can obtain effects exactly similar to those of the pile. This can be demonstrated as follows: Take an inductive coil of coarse wire and mobile helices (such as that of Tripier), worked by two of Gaiffe's chloride of silver cells with moistened tampons, excite the muscles of the thenar eminence; the contraction is strong but painful. The sensory and motor nerves are influenced at the same time with the muscles without changing anything; intercalate on the induction wire a condenser of one microfad; the muscle contracts as before, but there is no pain. What has taken place? Simply this: the interposition of the condenser has delayed the discharge, without modification of the quantity, as is shown by the balastic galvanometer.

Indeed, the condition of the induced discharge is proportional to the product of CxR, of the capacity, C, by the resistance, R, of the system. The resistance is the same in both instances, but it is not so with the capacity. It is about one-thousandth of a microfad only before the interposition of the condenser. After this, however, it is nearly a thousand times as great. We have all the intermediate varieties. In interposing successively $\frac{1}{10}$, $\frac{2}{10}$, etc., xxx $\frac{10}{10}$ of a microfad, we have gradually, with the same machine, physiological effects, currents of induction similar to those given by the pile. If we measure with a balastic galvanometer the quantity of electricity given by a discharge from the condenser, charged by means of the coil, we find 2,200 microfads, which is equal to the amount of electricity which 2,200 chloride of silver couples would furnish. Masson was the first to employ this arrangement, in 1854, to intensify the calorific power of the induced spark. It seems to me that this procedure will be of the greatest service in causing painless excitation of the muscular system (as Tripier treats uterine deviations, etc.), and also will it be of service in studying the reactions in the degeneration of Erb. We come now to a physiological study of the action of alternating currents. Mons. D'Arsonval read a communication before the Biological Society last winter, giving his experiments to determine whether the different methods of electrization could modify the respiratory gaseous charges and the thermogenesis. He found that the static bath augmented the absorption of oxygen, and the elimination of carbonic acid. Nothing remarkable happened with the galvanic current. The induced currents were accompanied with great muscular contractions, which greatly modified these changes. He then passed through the organism alternating currents generated by a Siemens bobbin, the period being long enough to occasion very slight muscular contraction. Under these conditions, the passage of these currents, without any motor reaction, augmented considerably these changes. Although not accompanied with any appreciable electrolytic effects, they are very liable to produce the trophic changes which, at present, are expected from the galvanic current; effects generally attributed to electrolysis, when brought to bear upon certain tumors that are in the intra-polar circuit (fibrina, etc., as practiced by Tripier and Apostoli). There are two methods suggested by Mons. D'Arsonval. One is to make use of a magnetic machine as a generator of alternating currents, intercalating a suitable ampère meter, giving the least intensity in milliampères, as for the galvanic current; the other consists in making use of the ordinary galvanic cell, and then generating these currents by means of a rotating commutator of a special form. The machines in ordinary use are characterized by great differences in their physiological effects. These differences are all due to the inequality of each electric wave produced by these various machines. Mons. D'Arsonval invented a most ingenious appliance, an optic galvanograph, for tracing these curves. Clarke's machine was found to give a curve indicating shocks of some severity. In this machine the line is abrupt and broken; in the sirrus-ördal machine, the line is harmonious, even and unbroken. The intensity of these currents was measured with an aperiodic balance of Curie, on the beam of which was suspended a small loop of very fine wire, that entered a fixed bobbin through which the current passed. Such a machine, for generating these sirrus-ördal currents, has been made by Gaiffe. He constructed a collector capable of collecting the currents of the pile, and by means of a gradual augmentation or diminution of the current, followed by reversing, sirrus-ördal currents are generated. This collector is composed of two concentric metallic discs, mounted on a wooden box, one of which, the most external, is divided into 114 segments, insulated the one from the other, and capable of being brought into communication with a battery of 28 elements. The internal disc is divided into two segments, which are also insulated from each other. Upon each disc is fastened, for gentle rubbing, a metallic brush, the revolutions of which can be governed at will. These brushes are supported by a crank divided into two separate conductors, one corresponding to the external brush, and the other to the internal brush. This crank rests on an axis, which is also divided into two conductors, and against which two other brushes rub, which transmit the current collected to the binding posts of the current taken, which are in front of the machine. This disposition allows us to collect at the binding posts of the active machine, the current of either the internal or external disc.

The elements of the pile are coupled in tension, and united one by one to the 29 first segments of the external metallic disc, all the carbons being placed in communication with these segments, which are consequently positive. The negative of the first element to the half internal disc, corresponding to it. The twenty-eight segments following the external disc are united one by one to the first twenty-eight segments. In a word the external brush rubs successively the segments 1, 2, 3, 4, etc., up to 29; it continues to advance meeting segments 28, 27, 26, etc., down to 0, while the internal brush becomes exhausted upon the un-interrupted half disc, giving a negative current. At zero the brushes find a condition just the reverse of this, the segments of the external disc are there united to the negatives of the battery one by one, and the positive is united to the internal half disc. From this disposition we have a regularly alternating current, from maximum to zero. The brush movement can be obtained by a toothed wheel, using the hand to rotate it, or by motor. A theostat can be intercalated to regulate the current.

We all know that Clarke's machine is purely one of magnetic induction. It consists of a fixed magnet. Two bobbins, wound with fine wire, the one right handed, and the other left, which are revolved by an endless loop of tube attached to a crank, and a very ingenious commutator so arranged that these solonoidal actions of alternate half revolutions in opposite directions, may be modified. This machine is not without much merit, but the characteristic of excitation shows great irregularity, and much shock. The Slatic induced current is very pleasant, very soothing and superior, so far as my own observation goes, to the induced current of the coil. In the sirrus-ördal current, however, we have something entirely different. A current capable, I believe, of giving startling results. I am sorry that my battery from Gaiffe has not arrived, that I might demonstrate it to you. Apostoli is just now experimenting with it in uterine tumors, and I await his results with great interest.

Dr. Morton: I do not think on a paper so very technical in its character that there is much to to be said until we can study out the details which have been presented in but a brief resumè. I feel myself in doubt as to the construction of the coil. I saw the article but late on Friday night and have not had time to read it yet. I gather in a general way that it resembles the undulatory current of the Clark coil and that it resembles the Clark machine, and I think it is better to think of it that way for the time being. We are thankful for this current intensity and potentiality pointed out to us in its relations to particular diseases. In the induction coils we have a distinct interruption in the primary circuit, and in the secondary circuit we have the undulatory current as in this case. The advantages claimed for this, as I understand it, depend upon the continuity of the current. It is a curious thing that this very principle has been the means of amassing millions of dollars in the great Bell Telephone Co. Between the Rice telephone and the Bell there is this difference: In Bell's the circuit is continuous, which is not in the other, and the two electrodes of the Bell's are always in contact, sometimes light, sometimes heavy; so that that vast monopoly has been built up just exactly upon this little plain thing of D'Arsonval's improvement, namely, continuity and uninterrupted current; and if this can make a difference of millions of dollars in the industries, it may make a considerable difference to us in medical treatment. I shall await the trial of this new current with considerable anticipation.

Dr. Bigelow: There will be a considerable advantage in this, for you can record the wave of sedation of every patient in the clinic.

J. H. Kellogg, M.D., read a paper on

TWO NEW ELECTRODES.

I wish to bring before the Society two new forms of electrodes for therapeutic use, which I have found of practical value and have used quite extensively within the last year.

The first of these is a flexible, slightly adhesive electrode which is used dry. The electrode is composed of gelatine, finely powdered graphite, glycerine, and chloride of sodium. It is made as follows: Dissolve 20 ounces of the best gelatine in 10 ounces of boiling water; add 10 ounces of glycerine and 2 drams of sodium chloride; heat and add 10 ounces of finely-pulverized gas carbon, mixing thoroughly.

To form the above mixture into an electrode, take a shallow tin pan of the size desired for the electrode. Oil the inside of the pan with vaseline. Pour in a sufficient amount of the hot mixture to cover the bottom of the pan; lay in the pan a piece of sheet lint, cut of sufficient size to allow the edges to turn up about one-half inch around the sides of the pan; pour in some of the mixture, sufficient to saturate and cover the lint; lay in another piece of the lint, a little smaller than the first, and cover this also with the mixture in the same way. A third and fourth sheet of lint may be added, if necessary. Usually, two pieces are sufficient to give the desired strength. A piece of brass-wire cloth, to one corner of which a binding post has been attached, is next laid in; add more of the mixture, if necessary, and then another piece of lint. The wire cloth and the last layer of lint may be a trifle smaller than the electrode is desired to be. Lastly, fold the upturned edges of the first layer of lint over the back of the electrode, and apply a sufficient amount of the mixture to bind them in place. When the electrode is cold, and sufficiently hardened, carefully remove from the mold. If the surface of the electrode is not perfectly smooth, it may be polished with a hot spatula. Whenever the surface of the electrode becomes roughened by use, it may be smoothed in the same way. If the electrode becomes cracked, or its surface very irregular, it may easily be repaired by applying a little of the hot gelatine mixture, and smoothing with a spatula.

This electrode is light, clean, adhesive, a good conductor of electricity, and durable. I have often had an electrode of this sort in daily use in my office for weeks without being able to detect any material deterioration in it. I find that a greater quantity of electricity can be communicated to the patient through an electrode of this composition than through a clay electrode of the same size. I attribute this to the more perfect contact between the skin and the gelatine-graphite electrode than is obtainable with a clay electrode.

I first began experiments with reference to the construction of this electrode in July, 1890; I began the use of the electrode in August of the same year, and have employed a number of them in my office since that time. From twenty to fifty applications of the galvanic current are made in my office daily, in a large proportion of which currents varying from 40 to 250 milliampères are employed. I have constantly under treatment a considerable number of cases of myoma, but I have not, since I began the use of this electrode, found it necessary to resort to the clay, or any other form of electrode in a single instance. A flexible and adhesive electrode may be made by combining red lead with the gelatine, and other substances capable of acting as good conductors.

I have recently had constructed and have used with much satisfaction another form of electrode, which so far as my knowledge extends, is novel. It consists of a metallic vacuum cup, to which a binding post is attached, a moist sponge being placed inside. In use, the air is passed from the cup, causing it to adhere firmly in position, and at the same time bringing the tissues in close contact with the sponge. In the use of this electrode three advantages are gained:

1. The vacuum created in the cup establishes a condition favorable to electrical conduction. The resistance of the skin is considerably lessened by the increased vascularity induced by the vacuum created within the cup.
2. Very excellent contact is produced by the strong pressure of the moist sponge against the tissues, resulting from the exhaustion of air from the cup.
3. An intensified impression is produced upon the tissues by the combined influence of the electrical current and the cupping.

I have found this electrode very efficient in the treatment of obstinate, deep-seated pains which had resisted the long continued use of both cupping and the galvanic current employed separately. I am still studying the properties of these electrodes, and shall be able to make, at a future time, a more precise report of their value and properties.

(*To be Continued.*)

THE SECRETION OF ACID IN THE STOMACH IN MENTAL AND NERVOUS DISEASES.—Observations on this subject have been made by Dr. Lenbuscher. He determined the acid present in the stomach two to three hours after meals. In 12 cases of melancholia, the condition was normal in 50 per cent. In 5 cases of mania, the acid was increased. In chronic paranoia, the proportions were normal. In 50 cases of paralysis [general paralysis?] examined, the proportions were, generally speaking, not normal, being so in 2 cases only; 2 showed no hydrochloric acid, 5 hyperacidity, and 9 had very little. In most of the cases, the quantity oscillated between absence and a high proportion. Paralytic cases showed diminution of acid, as also apoplectic and epileptic cases. In chronic morphinism in which the morphine had been withheld, the quantity was diminished. The treatment of psychoses with opium had no effect on the secretion. In chronic alcoholism the proportion was normal. In neurasthenia the quantity was generally increased. Patients much excited showed slight increase.—*Medical Press and Circular.*

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SATURDAY, FEBRUARY 20, 1892.

ANTIPYRETIC TREATMENT OF TYPHOID FEVER.

The remarkable results obtained by LIEBERMEISTER in the use of cold baths in typhoid fever at once attracted the attention of the physicians of the world. But his indiscriminate use of the baths in all cases in which the temperature became elevated, was, and is to-day much criticized. It is quite apparent that in such a disease as typhoid fever, there must always be many other factors to be considered than the single one of the temperature range. In America and in England the rigid application of the LIEBERMEISTER plan never found a very wide application. Social conditions as well as the judgment of physicians would not permit its use generally. In other fevers high temperature has not been found to be of the great danger which it has long been held to have in typhoid fever. But the long duration of the elevated temperature of typhoid is a factor which compels attention to the temperature in this particular fever. There has recently developed a school of physicians who affect to despise the thermometric showings in typhoid fever, and who never interfere with the temperature unless it reaches a very high degree, such as 105° or more, and even then unless the temperature remains for some time at this high point. But this ignoring of high temperature is probably more dangerous to patients generally than the routine employment of cold baths would be.

While a single upward spurt of temperature, is probably not dangerous in itself, it does not follow that long continued high temperature is equally innocuous. Recent experiments which have been made with microörganisms show that continuous exposure of them to a temperature of 104° or more, results in such changes in their chemical composition, that is to say, in their nutrition, as to modify greatly their reactions with staining reagents. If this be true of vegetable cells, and direct experiments prove it, it seems probable that it would likewise be true of the more delicate animal cells which go to make up the human organism. Definite experiments are lacking to prove this latter proposition, but the clinical results obtained by LIEBERMEISTER can admit of no other explanation than that continuous high temperature is destructive to the animal organism as a whole, and that systematic reduction of high temperature in typhoid fever is followed by good results.

But it must not be forgotten that elevation of temperature is only one of the elements of fever. The nervous manifestations of typhoid are parts of the fever to be considered apart from the mere matter of temperature. The degree of mental hebetude, the delirium, the muscular tremulousness, the weakness of the pulse, are all elements which are not to be measured by the degree of temperature present, and which yet are essential features of the fever, and in considering the results of the treatment by cold the effect upon these nervous manifestations must be noted. Now the administration of the cold bath according to the plan of LIEBERMEISTER whenever the temperature rises above 103°, unquestionably produces not only a lower temperature, but also affects most favorably the delirium, the tremulousness, the pulse and the mental hebetude. But as LIEBERMEISTER himself has shown, intestinal hæmorrhage occurs more frequently after its use, and relapses are more common.

The chemical antipyretics likewise produce a reduction of temperature, and with it, improvement in many nervous symptoms; but it seems that this is done at the expense of the general strength, and the idea is growing that the habitual use of the chemical antipyretics in typhoid fever, very materially prolongs convalescence, and in many instances impairs the strength to so great a degree that death ultimately follows. The judicious occasional use of chemical antipyretics in typhoid fever may be allowable, but their frequent or continuous use is disastrous, and in no way to be compared with the cold baths.

But to put a patient with a weak pulse into a cold bath is by no means free from danger. Fortunately, DR. JAMES BARR,[1] of Liverpool, has devised a plan of antipyretic treatment of typhoid fever, by water, which seems to combine all the advantages of the cold baths, while avoiding their objectionable features. DR. BARR's plan is to immerse the patient continuously in a tank of water. The tank is 6 feet long, 2 feet 6 inches wide, and 16 inches deep. It is provided with a frame and straps of bed-ticking, for raising and lowering the patient into the water. The permanent tanks which he uses in his hospital are provided with open-mouth soil pipes to receive the discharges of the patients. The patient is wrapped in a blanket and completely immersed in water, except the head, which is supported on an air pillow. The temperature of the water is raised or lowered according to the temperature of the patient. As the temperature of the patient approaches normal, the temperature of the tank water is made to approach this point, and as the patient's temperature rises, the temperature of the tank water is lowered. Dr. Barr has not found it necessary to lower the temperature of the tank water below 90°, nor raise it above 98°. Dr. Barr has treated altogether twenty-two cases in the tank. All of these have been severe cases. The patient is removed once each day to allow the tank to be cleaned. The duration of the immersion has varied from six days to thirty-one days.

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[1] The Treatment of Typhoid Fever and Reports of Fifty-five Consecutive Cases, with Only One Death, by James Barr, M.D. London: H. K. Lewis. 1892.

The method is by no means an æsthetic one, but seems to be capable of producing excellent results. The inconveniences and difficulties which it entails are not to be considered in its use, if it successfully reaches a severe class of cases which it would be dangerous to treat by the wet pack or cold bath plan.

Space will not permit a review of individual cases, but Dr. Barr's general statements as to the effects of tank treatment, should receive careful attention.

Temperature.—No attempt was made to prevent the evening exacerbation of temperature, but merely to moderate it, and to secure as far as possible a daily remission to 99° or 100°. This was usually accomplished; in one case, however, the temperature remained persistently high, and occasional ice water enemata were given. Dr. Barr believes that the action of this tank is truly antipyretic, the thermogenesis being diminished, the thermolysis being regulated, and the thermotaxic mechanism being improved.

Circulation.—The vaso-motor tone was markedly improved; the blood vessels became smaller and firmer; the pulse became slower, fuller and of improved tension; the heart maintained its vigor.

Respiration.—The respiration lessened in frequency; bronchitis and congestion of the lungs improved and soon disappeared. In one case, double pneumonia was present as a complication, the patient was in the tank nineteen days, and was cured.

Digestion.—The appetite and digestion improve, the tongue becomes moist and clean, the diarrhœa diminishes, and the stools improve in character.

Nervous System.—The delirium disappears and the general well-being of the patient greatly improves.

Weight.—Diminution in weight occurs, but not as markedly as usual.

Skin.—The horny layers of the palms of the hands and soles of the feet get quite macerated, but on the skin of the body generally there is very little effect, with the exception of a slight roughness and elevation of the papillæ.

The use of the tank does not interfere in any way with other treatment. The diet is to be regulated as usual, and intestinal antiseptics may be used if desired. Special symptoms are combated as usual.

THE DIAGNOSIS OF THORACIC TUMORS.

At the November meeting of the Berlin Medical Society, Professor Virchow made some interesting observations on the diagnosis of tumors of the chest. He opened by saying that a helpful discrimination may be made at the outset by inquiring whether the tumor to be investigated is of the class which tends to ulceration, or to those that do not readily ulcerate. This being determined renders classification easier. To those tumors that do not tend to ulcerate, he has found, belonged the largest masses, and those that wrought the most extensive changes in the thorax: to this group belong the lympho-sarcomata. The point of origin of these growths is ordinarily in the deeper, and not in the peripheral portions of the chest. Cases are very rare in which the more external tissues serve as the starting-point. Lymphatic glands of various anatomical relations, as bronchial or mediastinal glands or tumors that have pressed their way downwards from the jugular glands may be first involved. A still larger category of growths arises from the pulmonary interstitial tissue—which in a measure acts in the lungs as Glisson's capsule does in the liver—surrounding and pursuing their course with the large vessels of the lungs: and in this way the peri-bronchial lympho-sarcoma has its origin. All these different examples have in common the resemblance in their structure to the lymphatic glands. What, however, distinguished these tumors most wonderfully, and of which fact pathology possessed few parallel examples, was the prolonged vitality of their elements, in consequence of which we find that they behave very much as if they were of the normal constituents of the body. They are almost always found as enclosed masses, and do not become caseous, and do not suppurate or ulcerate. In a small proportion of cases, a persisting thymus gives origin to a mediastinal lympho-sarcoma, occupying the same relative position as the thymus and occurring almost exclusively in young persons. Other subordinate forms, as chondromata, osteomata and to some extent teratomata, occur in the chest with rarity, but may attain to a not inconsiderable size.

Referring to the ulcerative forms of thoracic growths, the cancers stood at the front. These tumors have various points of origin within the thorax, independently of the metastatic and œsophageal varieties; they arise in pulmonary structure as well as in the glands above mentioned. The manner of dissemination of a pure bronchial cancer, there exhibited, was commented upon: The tumor had completely occluded the bronchus and terminated below in the shape of a polypus. A dissemination thence took place into the smaller bronchi. These bronchial cancers belonged to the group of cancroids, were marked by strongly developed flat epithelium, and resembled the laryngeal and labial cancroid. Cancer of the lungs generally attains to considerable size before ulceration begins. He has been astonished to find that clinicians are generally agreed in the view that no characteristic cells of cancer could be found in the sputum. He was of the opinion that such cells can be found with a little more patience, for carcinoma of these localities have the peculiarity of casting off relatively large quantities of undecomposed material, so that by repeated examination the typical elements of the tumor can sooner or later be discovered in the sputum. Suppurative mediastinal tumors, having a syphilitic history, may also come up for differential diagnosis from the other forms already referred to; and these may have complications and sequels closely resembling the changes wrought, in surrounding structures, by tumors of the former classes. But as the report of the discussion in the *Medical Press* has it, VIRCHOW shows a reticence in regard to these conditions, for he feels that as to them "he is not a good giver of counsel." At the December meeting of the same Society, VIRCHOW returned to the subject, exhibiting a mediastinal cancer that had the macroscopic appearances of lympho-sarcoma. From its history, it was a metastatic growth, but there were no signs of retrograde change, and in the permanence of its tissues behaved exactly like a lympho-sarcoma—thus illustrating in a striking way the want of agreement sometimes observed between the microscopical and macroscopical appearances, and at the same time emphasizing VIRCHOW'S teaching that patience and time are important elements where the diagnosis of tumors is concerned.

A CASE OF DOUBLE RIGHT KIDNEY, WITH NONE ON THE LEFT SIDE. PUNCTURE OF VEIN IN LAPAROTOMY. DEATH.

A case of misplacement of the kidney, reported as unique in character, was presented to the Academy of Medicine of New York, in its Section on Obstetrics, at its October meeting. DR. W. GILL WYLIE showed a kidney, abnormal in shape, which had during life been found beneath the right broad ligament. He stated that he had never heretofore seen a kidney situated so low down in the pelvis. There was another kidney on the right side, in its normal position, but there was no left organ. He was enabled to secure the misplaced organ a short time after it had been discovered; for the patient lost her life consequent upon surgical hæmorrhage, after an abdominal section. The case was interesting, furthermore, to the reporting surgeon and to his auditors, because it was the first death in a series of seventy consecutive laparotomies done by the reporter.

The operation passed along successfully enough, so far as could be seen, and the external wound was closed and dressed. But a small vein had been punctured with the needle in tying off the left broad ligament. This injured little vein had a low-lying position, and had not bled during the time that the ligament stump had been held up, but when it had been dropped back, it allowed a gradual venous hæmorrhage to become established, which ended fatally. If the surgeon had waited a little while after the operation, or if the earlier signs of blood-loss had been reported to him, so that he could have reopened the abdomen before the patient had been too far reduced, or if a drainage tube had been left in the wound for a little time, the fatal issue might have been avoided. As it was, the patient was too far gone to be saved by the second operation: she died the following morning. DR. WYLIE said that in the minds of some surgeons, "shock" was considered the *modus mortis* of cases which were, in point of fact, lost by hæmorrhage. Altogether too many cases have been reported as dying from shock. He would not deny the existence of shock in his practice, but it usually occurred while the case was on the operating table—in feeble women or in acute disease—and could be readily recognized at the time. The position of DR. WYLIE is that if the "shock" comes on during the second to the tenth hours after an abdominal section, and if at the same time there are the classical signs of internal hæmorrhage, the latter must form a demand for the immediate recall of the surgeon; no time is to be wasted in trying simply to stimulate the patient. The indications are to at once proceed surgically for the removal of the causes of blood-loss. This was done in the case referred to above, as soon as the surgeon was recalled to the case, but it was then too late to save the patient. Fuller details of the discussion of this interesting case are to be found in the *New York Journal of Gynecology*, for December, 1891.

SHOULD SYPHILITIC MEDICAL MEN CONTINUE IN PRACTICE?

DR. NEISSER, of Breslau, has considered the question of the expediency of the continuance in practice of physicians who have become syphilitic (*Centralblatt für Chirurgie*). His communication takes the form of a reply to a direct inquiry addressed to him by a professional colleague who had been advised both ways—to continue and to retire. NEISSER'S conclusions are that the necessity for a physician to retire from practice must be the exception to the rule; provided, that he shall have been under an efficient specific treatment. He offers his views chiefly on the following conditions: First, concerning the stage of the disease; second, the thoroughness of the specific treatment down to the time when practice is resumed; third, the state of the eruption, especially on the hands of the person whose line of practice is that of surgeon or accoucheur; fourth, whether any other affections of the skin, possibly not syphilitic in origin, may exist. The probabilities that a well-treated medical man will convey his disease to others are, of course, lessened in proportion to the remoteness of the date of his infection, and the lengthened interval since activity of efflorescence on skin or *mucosa* has been noticed; but even in recent cases, with popular eruptions and small ulcers, the writer holds that no serious danger need exist when the physician protects, as he should, the surfaces involved in the disease by means of rubber cots or impermeable dressings. In regard to non-syphilitic eruptions there is little probability of danger, where any ordinary degree of care is exercised; the eruptions themselves, NEISSER thinks, cannot be a source of infection, with the almost sole exception that blood might be conveyed from some abraded eruption to the raw surfaces on the patient. And with regard to this danger even, he does not consider that it has been settled. As to active engagement in obstetrical and surgical practice by a syphilized person, NEISSER claims that no hard-and-fast rule can be framed, and that very much must be left to the good judgment of the practitioner and to the merits of the case at the time the question of attendance shall be raised.

ANTISEPSIS FOR THE HANDS.

At the Johns Hopkins' Hospital the use of bichloride of mercury as an antiseptic has declined to a considerable extent in favor of solutions of permanganate of potash in combination with oxalic acid. DR. MALCOLM MCLEAN, at the October meeting of the New York Obstetrical Society, reported on his use of three formulæ, given below, for obtaining an aseptic condition of his hands (see *New York Journal of Gynecology* for December). Having briefly referred to the fact that DR. W. H. WELCH and other members of the Hopkins' surgical staff have come to the conclusion that corrosive sublimate solutions are inferior to those of the permanganate for many antiseptic purposes, the author says that he has found that the scrapings from the finger-nails, etc., taken after an ablution of the hands with any one of the ordinary antiseptic solutions, have developed, under culture in the laboratory, numerous germs. But when solutions of the permanganate of potash and oxalic acid had been used this was not the result, showing the superiority of the latter agents. The staining of the hands by the potash solution has been a serious objection, but he believes that this may be obviated by the use of a solution of hyposulphite of soda, one part to sixteen, and oxalic acid, one part to thirty-two of water. The steps of DR. MCLEAN's process are (1), the hands, having been thoroughly cleaned, are to be held for two minutes in a solution of the permanganate of potash, five parts to one hundred, after which the hands should be rinsed in clear water; (2) hold the hands for one minute in a hypophosphite of soda solution, one ounce to the pint; and (3) while this is being done add the oxalic acid solution, one-half ounce to the pint of water. This causes a double chemical combination, whereby an oxalate of sodium and sulphur dioxide are formed, which have powerful decolorizing and disinfecting properties. The permanganate stains are promptly removed from skin and nails; after again rinsing the hands in sterilized water they are ready to come into contact with either an exposed serous or a lacerated mucous membrane. The hands may then be regarded as both surgically and obstetrically clean.

STATE CARE OF THE INSANE IN NEW YORK.

An investigating commission has been appointed in New York City to advise whether the city authorities shall continue to care for the insane or shall transfer them to State care. A recent census of the the insane inmates provided for by the city showed a total of 5,483; at Blackwell's Island, 1,813; on Hart's Island, 1,319; on Ward's Island, 1,919, and in the branch at Islip, 402. This number is being increased at the rate of two hundred, nearly, every year, which is somewhat less than the proportionate average annual growth of the city's population. The cost of maintenance of these insane persons is about thirty-six cents per diem. This is about forty per cent. less than the patients under the State's care cost. The aggregate cost to the taxpayers exceeds $500,000. But this does not relieve the city from being taxed in the general levy for the care of the insane throughout the State, so that the law offers to the county of New York a standing invitation, financial in character, to come into the fold of the State Lunacy Commission. The law passed in 1889 left it optional with three only of the counties, New York, Kings and Monroe, to retain their control of the treatment of the pauper lunatic, with the intent that those alleged "relics of barbarism," as they exist in the rural sections,—the county poor house and the county lunatic asylum—should by degrees be relieved from their long time responsibilities. A second object of the law was that the unfortunate lunatics should be placed under the medical care of superintendents who recognize that curability may be predicated of a certain proportion of unbalanced minds, even when they are classified as "chronic cases." The newly appointed commission consists of five members, no one of whom is a physician. The questions to be considered are, of course, primarily financial, but the commission will not be allowed to forget the interests of the pauper lunatic. The medical profession will see to it that the advances already made in lunacy legislation shall not be put back. The poor lunatic has been the most sedulously robbed of all the classes of our communities. County officials and asylum trustees have had the almost unwatched control of the "crazy monies" and the least possible portions thereof that could be prevented found their way to the support and amelioration of the weak and defenceless pauper lunatic. Who was there in the community who could be plundered more readily? But now the times are different, and medical associations and other charity defense societies are organized and keenly alive to the perils of the poor, the insane and the unprotected. A great deal of volunteered watchfulness is being exercised as to the disposition sought to be made of charitable funds.

SURGERY OF ABDOMINAL WOUNDS.—Dr. T. H. Manley contributes to the *Boston Medical and Surgical Journal*, October 8, a paragraph referring to the traumatic surgical work of Dr. Postempski at the Consolation Hospital, at Rome. He has had fourteen abdominal sections to perform in consequence of penetrating wounds of the peritoneum. In all these cases the wound was inflicted by a blade, mostly the stiletto. All of these patients recovered. The hospital in question is centrally located in the Piazza del Forum and in the institution which receives a very large share of the traumatic surgical cases of that city.

THE YALE STUDENTS' INFIRMARY.—The ladies of New York City and vicinity have been organized for some months past on behalf of the Yale students, and their better care when sick. An infirmary of small size is their objective point, and the committee seek to raise $25,000. Subscriptions to the amount of $22,000 are said to have been promised on or before the last week in December, 1890.

A MEMORIAL HOSPITAL AT JOHNSTOWN, PA.—On February 4 the dedication of the Conemaugh Valley Memorial Hospital took place with suitable religious and historical addresses. Drs. Forbes and Pancoast were present from Philadelphia as representatives of the medical profession of a city that exerted itself nobly to mitigate the sufferings caused by one of the most disastrous calamities of modern times. After the ceremonial of presenting the new hospital to the Board of Citizen Trustees, an inspection of the building was made by the visitors. The cost of construction and furnishing has been defrayed by the State Flood Commission, and amounted to over $65,000. This expenditure forms a fitting close to the work of the Commission, which was entrusted with the disposal of not less than $3,750,000 for the relief of the desolated valley.

INCIDENTS OF THE INFLUENZA EPIDEMIC.—Recent information from the Continent shows that Charcot and Billroth have, about the same time, been victims of the epidemic. At the time that Billroth was ill, there were four or five others, professors in the University, who were prevented by the same cause from going on with their lectures or clinics. The lunatic colony at Gheel has had many cases of *la grippe*, many deaths and many prostrating sequelæ.

DOMESTIC CORRESPONDENCE.

Public Health Department.

WISSINOMING, PHILADELPHIA, PA., Feb. 1, 1892.

HON. M. S. QUAY, UNITED STATES SENATOR:

My Dear Sir.—Permit me, as a member of the American Medical Association, to invite your special attention to the Bill introduced by Senator Sherman, providing for a National Bureau of Health, and the appointment of a Cabinet Secretary of State Medicine.

The importance of the measure can hardly be overestimated. You know what vaccination has done towards protection against small-pox (even for your own constituents in Philadelphia), and what quarantine does in protecting us against yellow fever and similar invasions. Now, sir, our profession, and especially members of the American Medical Association, stand prepared to prove that the dreadful disease, diphtheria, and many similarly destructive pestilences, *only exist* in our midst because concerted action, properly directed, cannot be *enforced.* With the appointment of a National Secretary, we could be assured of useful application of all the important information concerning epidemic diseases already acquired, while the system of thorough investigation of all such subjects will then, and *only* then, become mastered.

We are now like an army of good soldiers without a general. Very truly yours, N. ROE BRADNER, M.D.

UNITED STATES SENATE, WASHINGTON, D. C., Feb. 5, 1892.

N. ROE BRADNER, M.D., WISSINOMING, PHILADELPHIA, PA.:

My Dear Sir.—Your letter of the 1st inst. is at hand. The proposition contemplated in Senator Sherman's bill—to form a National Board of Health—is, in my opinion, an excellent one, and I intend to support any legislation looking to its adoption. I am very truly yours, M. S. QUAY.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

The Adams County (Ills.) Medical Society, on February 8, presented the following testimonials to its senior member:

"Last week occurred the fiftieth anniversary of the doctorate of Dr. Francis Drude, an honored member and past-president of the society, he having graduated from the University of Berlin on the second day of February, 1842.

"When fifty years of active work in a profession so exacting and laborious and subject to so much risk and exposure as that of medicine still finds a man in the full possession of his mental vigor and retaining his early enthusiasm in scientific pursuits, the event is sufficiently rare and interesting to command especial notice.

"The Adams County Medical Society therefore gladly avails itself of the privilege of congratulating Dr. Drude upon reaching his golden anniversary, and to express and record the hope that it may yet for many years enjoy his presence, draw from the stores of wisdom garnered by his long experience, and catch new inspiration from his steadfast example."

From the society, Dr. Joseph Robbins then presented a beautifully engraved gold-mounted cane, and in an eloquent address pledged anew the right-hand of fraternal fellowship to Dr. Drude.

That the Doctor fully appreciated the tokens thus bestowed was clearly evidenced, both in his grateful acceptance of them and in the hearty grasp of his good right hand. Respectfully yours, CHARLES W. ROOK.

SELECTIONS.

THE PAN-AMERICAN MEDICAL CONGRESS AND THE ROME MEETING.—The fact that the Pan-American and the International Congresses are to meet in the same year, and both of them in the autumn, has given rise to the impression among some that the former was conceived in opposition to the latter. Nothing, we are persuaded, can be more erroneous than this idea, and we believe that, so far from interfering, the Pan-American will actually help to increase the attendance at the Rome meeting. Many physicians from the Southern Republics, having already taken the long journey necessary to bring them to the Washington meeting and the World's Fair, will be prepared to extend their vacation and go to Rome, when, without this extra incentive, they might not have been persuaded to go to the International Congress.

The promoters of the Pan-American Congress were at pains to ascertain the date of the Rome meeting, so that there might be no interference, and with this object wrote to Dr. Baccelli several months ago. The latter replied that the Rome meeting would probably be held during the last week of September or the first week of October, although the exact time had not been definitely settled upon. This reply was not received until after the meeting of the Committee in St. Louis, when the date of the Pan-American had been already fixed for the first week in October; but when it was learned that this would interfere with the International, the time was changed to the first week in September. This will make it easy for those who desire to attend both meetings to do so, and is evidence that the Committee of the Pan-American Congress desire to promote rather than to antagonize the International. The Washington meeting must, of course, be held in 1893, in order to afford the opportunity to the Latin-American members of visiting the World's Fair, and the fact that that is also the year for the assembling of the International Congress is but a coincidence, which will, however, be of distinct advantage to both bodies.

The organization of the Pan-American Congress is in the hands of good men, the National Committee is a thoroughly representative one, and the delegates thus far selected from the other countries of the Continent are men of eminence at home, and many of them of an international reputation as well. The idea of an American Congress has been well received in our sister Republics, and, now that the danger of a hostile meeting with one of them has been happily averted, there is every reason to anticipate a most successful meeting, and one that will be productive of mutual advantage and pleasure to all who take part in it. And we are confident that the entire profession in this country will labor as a unit to aid the Commission in their good and patriotic efforts, and to further in every possible way the success of the first Pan-American Medical Congress.—*Medical Record.*

THE NATURE AND FREQUENCY OF DISEASE OF THE SPINAL CORD IN GENERAL PARALYSIS.—The spinal cord has been examined by Dr. Köberlin in twenty-three cases of general paralysis, examination being made of pieces from the cervical, dorsal and lumbar regions in each case, and the sections were stained with Weigert's hematoxylin and with carmine. Morbid change was seen in the lateral pyramidal tracts and posterior columns. Sometimes Goll's columns alone are degenerated, at others Burdach's columns are affected, though to a less extent in most instances. Cases were observed where Goll's columns were separated by streaks of degenerated tissue from the outlying area of Burdach's The morbid appearances comprise atrophy and degeneration of the medullated fibres, with excess of connective tissue, and the presence of numerous corpora amylacea. The degeneration was found to be remarkably symmetrical, both in transverse and longitudinal sections. In one case syringomyelia was found, but this case the author considers atypical. The cases were divided by Dr. Köberlin into: 1. Affection of the crossed pyramidal tract. 2. Affection of the posterior columns. 3. Affection of both. In one case of the first mentioned class, there was a difference in weight between the cerebral hemispheres, and as the more atrophied hemisphere was opposite to the diseased lateral tract, the author is disposed to think that the pyramidal degeneration was secondary. Amongst the cases in the second class, he gives reasons for considering the cord-disease as primary in some; in others, the disease was probably first developed in the brain. In none of the twenty-three cases were the anterior columns or the lateral cerebellar tracts diseased.—*Dublin Journal of Medical Science.*

A HIGHER PROFESSIONAL STANDARD.—Much has been said of late, as to the necessity of elevating the standard of medical education. The work and results of medical colleges have been scrutinized and criticised, and laws passed and reformation advocated to raise the average college course, and regulate the routine of study.

All this is very well, and we are glad indeed that the best medical colleges in the land have responded to the demand. Our young men will be better fitted for their work, and the increased difficulty of entering the profession will prevent the old men from being crowded out by the great army of new-comers.

To stop short at the medical colleges, however, is far from right. When we see growing tendencies to loose and irregular practice among those who know better, and the strife and jealousy which so often exists among men whose education and work should make them brothers, we feel that there is an equal demand for a higher professional standard among those who are practicing medicine, as those who are at the threshold as students.

We have heard a man insist upon a higher grade course of study for students, and closer examination for graduates, while it was an open secret that his own methods were questionable and his personal character rotten. Indeed, it is often such fellows who make the most noise and, as a consequence, excite the most disgust.

Let the work of reformation which has begun in the schools, be carried on in the profession, until our ranks are free from those who disgrace themselves and all connected with them. There are enough of honest, right-minded men in the profession to freeze out or reform all these fellows—half doctors and half quacks. What we need is a recognition of a man's true standard, and the courage to treat him according to our convictions and his deserts.—*St. Louis Clinique.*

MIDWIFERY AMONG THE ALASKAN INDIANS.—The following notes on midwifery among the southeastern Alaskan Indians, the result of four years' experience amongst them, may be of interest: I will not discuss their superstitions, beliefs and theories concerning midwifery, but will describe as briefly as possible their manner of conducting a case of labor.

When a woman arrives at full term a tent or hut is erected at some distance from the Indian village. A hole about two feet deep is dug in the ground inside the hut (or tent), and is lined with moss. A stake is driven into the ground a few inches from the hole. When labor begins the woman is made to sit over the hole in a squatting position as though she were in the act of defecation and using the hole as a privy vault. She grasps the stake with both hands. One squaw sits behind with arms clasped around the patient's abdomen, and another sits at each knee to act as a brace or support. They make no examinations, the midwife not being allowed to see the vulva of the patient under any circumstances. When a pain comes the patient holds on to the stake, the midwife clasps her arms more firmly about the abdomen, and the other two women press firmly against the knees of the patient with their shoulders. This is repeated with every pain until labor is concluded. When the child is born it drops into the hole, where it is left for five or ten minutes, or sometimes longer. Sometimes the child is seriously injured by the fall, and bones are occasionally broken. In case of fracture no treatment is followed, the bone being allowed to unite as it will. The umbilical cord is divided about four inches from the navel. They do not cut it, but taking hold with their fingers partly twist it and partly pinch it off with their nails. They do not tie it, as the torsion prevents hæmorrhage.

The third stage is managed same as the second, the women supporting the patient and assisting her as before. The placenta is generally burned or cremated and the ashes preserved until the child dies. The Indians here cremate their dead, the ashes being afterwards put in a receptacle, which, with some of the property of the deceased, is placed in a small burial-house. With those ashes the ashes of the placenta are placed; sometimes, however, the placenta is buried.

After the placenta is removed, the binder is applied. This consists of a number of pieces of bark about a foot long and two or three inches wide, placed parallel to each other and quilted between two pieces of cloth or skin, like the bones of a pair of corsets. This, when applied, resembles a very coarse set of stays. The binder is left on ten days, during which time the woman is never washed. The blood and discharge become encrusted about the vulva and thighs, and, as it is moistened daily by the urine and lochia, her condition may be better imagined than described. Strange to say, I have never seen nor heard of a case of puerperal fever among them, although there have been about two hundred births in this neighborhood since I came here. During labor, and for ten days after, the woman is not allowed to eat or drink anything cold. Primiparæ remain in bed in the hut in which they were confined, for ten days, but many multiparæ get up and go about their work the first or second day.

To return to the child. It is first "fished" out of the hole and the cord divided. The midwife has a box or bladder containing a foul-smelling mass consisting of the leaves of some herb which has been chewed months before. A portion of this is applied to the stump and bound on. The child's face is then wiped, but no part of the body is washed. It is wrapped up and placed in a laced, bag-like arrangement (stiffened with bark in the same manner as the binder) which covers all of the child but the head. It is taken out of this to be cleaned three or four times daily. The child can be carried around like a sack of grain, but it is generally bound on the back of the mother. When the cord becomes detached it is covered by a piece of buckskin, which is nicely beaded. This is stitched to the breast of the child's clothing (like a rosette), and is worn by him until he is three or four years of age, when he is sent into the woods to hide it. There is a superstition connected with this which would take too long to detail.

In conclusion, I must say that their ignorance of midwifery is astonishing. In simple, uncomplicated cases they have, of course, no trouble; but if there is the slightest complication they are helpless.—J. K. Simpson, M.D., in *Occidental Medical Times.*

Inebriety.—In most cases inebriety is a self-limited disease. The drink symptom dies out naturally, or concentrates in some other form of morbid impulse. Any remedies or means used at the time of change will be credited as curative. The cessation of the drink impulse is not followed by full restoration, yet the impression prevails that total abstinence is a sign of cure always. Many pronounced paranoias and diseased persons who have abstained from alcohol, are posing as examples of cure from this or that means or remedy—persons in whom the drink impulse has died away naturally, no matter what remedy may be used. This is evident in the common class of those who sign the pledge, or profess conversion, many times, only to relapse after each occasion. Finally, in apparently the same circumstances, they go through the same formula, and the drink impulse disappears forever.

The real facts are that some organic brain change has taken place, the desire for alcohol ends. Other morbid symptoms may come on, but this disease has subsided or taken on new forms. The bark remedy, the mind cure, hypnotism, or any of the so-called specifics, that are followed by a cessation of a drink impulse, are all examples of this change. Physicians of asylums recognize this and direct all their efforts to build up and bring the patient back to a normal physiological life, in expectation of the final cessation of the drink symptom and restoration of the organic processes. This result may come on any time, and the object of all treatment is to encourage this, and remove the conditions which seem to provoke the drink symptom.

Drugs or restraint which holds the drink symptom in abeyance are never curative, and when followed by a subsidence of this impulse, it is an accidental conjunction of the natural dying away or change of brain function and growth. When such change occurs after long treatment in the best physiological and hygienic conditions, it is reasonable to suppose that these means have contributed more or less to this end. But when this subsidence follows in conditions opposed to this, and from means inadequate to change or alter organic action, clearly some other forces are at work.

The self-limitation of inebriety, and the natural history and progress of the disease are yet to be written.—*Quarterly Journal of Inebriety.*

Salicylate of Lithia.—Dr. Vulpian states that salicylate of lithia is more efficacious than salicylate of soda in cases of acute and progressive sub-acute articular rheumatism. It also has some effect in chronic cases when a certain number of the joints are still deformed, swollen, and painful.

Monobromide of Camphor for Spermatorrhœa.—The *Med. Summary* says: The monobromide of camphor has been successfully used in the treatment of spermatorrhœa, where a host of the usual remedies had been administered with no satisfactory results; finally the monobromide of camphor was given with prompt effect and perfect cures.

Salt-water (½ teaspoonful to the quart), by rectal injection, has been recommended in severe *acute anæmia*—for instance, from great loss of blood *intra partum.*—*Merck's Bulletin.*

Iodine-mixtures, according to Dr. Mann, are best prescribed with *molasses,* because the glucose contained in the latter not only disguises the taste of the iodine salts, but also protects them against chemical changes.—*Merck's Bulletin.*

NECROLOGY.

Dr. Francis J. Metcalfe, of Florence, Italy, died in that city on the 9th inst. He was the son of that delightful clinical teacher, Dr. John T. Metcalfe, of Bellevue Hospital, New York. The subject of this note was born in 1850, graduated from the College of Physicians and Surgeons, New York, when he was 21 years old. The greater part of his life since then has been spent in Europe, in Florence especially, a most acceptable practitioner among the American residents there, and among tourists as well. He was a fine linguist.

MISCELLANY.

An Army Medical Board will be in session in New York City, N. Y., during April, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the board will make application to the Secretary of War, before April 1, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between 21 and 28 years of age, and a graduate from a Regular Medical College, as evidence of which, his diploma must be submitted to the board.

Further information regarding the examinations may be obtained by addressing the Surgeon General U. S. Army, Washington, D. C.

C. Sutherland,
Surgeon General U. S. Army.

The Pan-American Medical Congress in New York State.—At a meeting of the Medical Society of the State of New York at Albany, Feb. 5, a committee was appointed to coöperate in promoting the interests of the Pan-American Medical Congress. The committee consisted of Drs. A. Walter Suiter, A. Vanderveer, James D. Spencer, Seneca D. Powell, W. W. Potter, D. B. St. John Roosa, and John O. Roe.

Michigan Complimented.—The last bulletin of the Tennessee State Board of Health, January, 1892, speaking of Michigan, says: "This State, with Massachusetts, may justly claim a leading position in the public-health movement. The people support their State Board of Health"—which carries on the work—"under the long-continued guidance of one who is, perhaps, the most eminent sanitary authority in the Western world. A notable feature in the programme of this Board has long been the holding of sanitary conventions from time to time in different parts of the State, small towns not being overlooked." Speaking of a recent one: "The proceedings fill a closely-printed octavo pamphlet of forty-three pages, and are able papers and discussions of the points in which the parties requesting the convention are directly interested, read and conducted not mainly by the officers and members of the State Board of Health, but quite as much by intelligent and cultivated citizens of Negaunee. Michigan, the University State of the Northwest, is no less distinguished as a model for sanitary reform in all that vast region. Tennessee, the University State of the South, should not lag behind Michigan in sanitation. Especially should those cities and towns which are the seat of crowded institutions of learning, patronized by the people of many States, take the lead in this grand field of popular education."

A Concourse will be held at Rush Medical College beginning Tuesday evening, March 1, for the purpose of filling the positions of Lecturer on Anatomy, and on Materia Medica, and Therapeutics in the Spring Faculty. The spring course begins March 1, directly after the close of the regular term, and continues two months with a class of from 250 to 300 students, thus affording the lecturers an excellent opportunity to exercise their skill as teachers. It is the policy of the college, so far as practicable, to fill vacancies in the regular faculty from the corps of spring instructors. Nine of the present members of the regular faculty have been selected in this way. The concourse will consist of twenty minute lectures by each of the applicants before the faculty, students and local profession upon subjects pertaining to their branches, which will be furnished by the Professors of Anatomy, and Materia Medica and Therapeutics, a week before the contest.

E. Fletcher Ingals,
Registrar.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 6, 1892, to February 12, 1892.

Capt. Henry G. Burton, Asst. Surgeon, Capt. Arthur W. Taylor, Asst. Surgeon: The above named officers, having been found by Army Retiring Boards incapacitated for active service, on account of disability incident to the Service, are, by direction of the President, retired from active service, February 5, 1892, under the provision of section 1251, Revised Statutes.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending February 13, 1892.

Asst. Surgeon P. H. Bryant, ordered to Naval Hospital, Philadelphia, Pa.

P. A. Surgeon H. T. Percy, detached from C. S. Str. "Patterson," and granted leave for two months.

P. A. Surgeon C. J. Decker, detached from Naval Hospital, Philadelphia, and to C. S. Str. "Patterson."

P. A. Surgeon John F. Uric, ordered to Naval Hospital, Portsmouth, N. H.

Surgeon Howard Wells, detached from Naval Hospital, Portsmouth, and wait orders.

Asst. Surgeon Joseph A. Guthrie, ordered to Naval Station, Port Royal, S. C.

Asst. Surgeon L. L. Young, detached from Naval Station, Port Royal, S. C., and to the receiving ship "Independence."

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending February 6, 1892.

Surgeon George Purviance, detailed as chairman, Board of Examiners. February 3, 1892.

Surgeon W. H. H. Hutton, detailed as member Board of Examiners. February 3, 1892.

Surgeon H. W. Sawtelle, granted leave of absence for ten days. January 30, 1892.

Surgeon Fairfax Irwin, granted leave of absence for fourteen days. January 26, 1892.

Surgeon F. W. Mead, detailed as recorder, Board of Examiners. February 3, 1892.

P. A. Surgeon H. R. Carter, granted leave of absence for seven days. January 20, 1892.

P. A. Surgeon D. A. Carmichael, when relieved, to proceed to Port Townsend, Wash., and assume command of Service. January 23, 1892.

P. A. Surgeon A. H. Glennan, when relieved, to proceed to South Atlantic Quarantine, and assume command of station. January 23, 1892.

P. A. Surgeon J. H. White, relieved from duty at South Atlantic Quarantine; to assume command of Service at Savannah, Ga. January 20, 1892.

P. A. Surgeon P. M. Carrington, when relieved, to proceed to Evansville, Ind., and assume command of the Service. January 20, 1892.

P. A. Surgeon G. M. Magruder, relieved from duty at New Orleans, La.; to assume command of Service at Portland, Ore. January 23, 1892.

Asst. Surgeon G. Vaughan, when relieved, to report to the Supervising Surgeon-General. January 20, 1892.

Asst. Surgeon J. O. Cobb, ordered to examination for promotion. February 3, 1892.

Asst. Surgeon J. B. Storer, ordered to examination for promotion. February 3, 1892.

Asst. Surgeon A. W. Condict, when relieved, to proceed to Wilmington, N. C., and assume command of the Service. January 23, 1892. Ordered to examination for promotion. February 3, 1892.

Asst. Surgeon C. H. Gardner, assigned to temporary duty at Baltimore, Md. January 27, 1892.

PROMOTIONS.

Surgeon H. R. Carter, commissioned by the President as Surgeon. January 28, 1892.

P. A. Surgeon G. T. Vaughan, commissioned by the President as P. A. Surgeon. February 6, 1892.

APPOINTMENT.

C. H. Gardner, of Maryland, commissioned by the President as Asst. Surgeon. January 28, 1892.

The Journal of the
American Medical Association

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ORIGINAL ARTICLES.

THE EPIDEMIC INFLAMMATORY NEUROSIS; OR, NEUROTIC INFLUENZA.

Read before the St. Louis Medical Society, January 30, 1892.

BY C. H. HUGHES, M.D.,
OF ST. LOUIS, MO.

Certainly sufficient clinical experience has now been obtained by reliable observers the world over to assign to the prevailing epidemic of influenza a place among the inflammatory neuroses. French, English, German, Italian, Russian, and American writers have noted the prominence, and often persistence of the nervous symptoms, discussing them generally as *sequelæ*. The initial and concomitant symptoms of influenza are so markedly those of a toxic inflammatory neurosis expending itself chiefly on the nerve coverings, nerve endings, and mucous membranes, that this aspect of its symptomatology and pathology will probably not be gainsaid by any one. The nerve centers, too, are so plainly involved as to need no proof other than what has been already offered by general clinical experience, so that its neuropathic and psychopathic accompaniments and sequences are the conditions obviously to be combated. It is a disease in the management of which the diagnostic and therapeutic experience of the neurologist and the alienist ought not to be ignored.

Dr. George H. Savage, whose long experience in the observation and treatment of the insane qualifies him to speak advisedly of what he has observed of this epidemic, says: "Influenza, like other fevers, may set up psychopathy. Insanity may come on at various periods of the disease. It may start any form of insanity. It may be the predisposing or exciting cause." He thinks in all cases there is some acquired or inherited predisposition. "The insanity follows from altered brain nutrition, possibly toxic. The onset of insanity is often sudden, and bears no relationship to the severity of the influenza."

While another English alienist, equally eminent, notes that the epidemic appears of a very virulent type, the mortality being very high, especially among the profoundly nerve-exhausted general paralytics of his famous institution at Morningside. Dr. Thomas Aitken, Medical Superintendent at Invernes, thus describes the effect of the epidemic fever among his patients:

"* * * In five of the cases there were distinct mental symptoms. In two of the attendants there was wandering, and for one night a condition bordering on delirium; whilst an old epileptic, who refused her food, believing that poison was introduced into it, became restless and suspicious; another, an aged woman of a pleasing and gentle nature, recently admitted, who had previously suffered an attack of influenza in another asylum, became a profound melancholic; whilst the unsettled condition of another female patient passed into active excitement, which passed away with the attack."

In *Allgemeine Zeitschrift für Psychiatrie* (xvii, Band, 1 and 2 Heft.) Professor Kirn, of Freiburg, concludes "that influenza is a more frequent exciting cause of insanity than any other febrile affection." He has collected fifty-four instances observed by himself or other physicians. He classifies the cases which pass into insanity under two heads: 1. Where delirium occurs during the febrile condition of influenza. This frequently accompanies pneumonia. There are delusions and hallucinations, strange dreams, shouting of a joyous character, or howlings and lamentations. In one case, a boy of 7 years, the influenza commenced with mental aberration, the child wandering away without knowing where he was going. Patients affected with delirium during the course of the influenza were rarely found to have any hereditary predisposition to insanity. The patient generally recovered from the mental derangement in a few weeks. In the second, or post febrile form, Dr. Kirn had the details of thirty-nine cases. The insanity generally appeared in from four to eight days after the cessation of the fever. In two it came on as late as three weeks after. From the clinical symptoms he divides them into three forms, characterized by the conditions of mental exhaustion, melancholia, and mania. The exhaustion is of the same character as those cases in which the constitution of the patient has been reduced by fevers to the puerperal state. There is excitement suddenly appearing, with confusion of the senses, and a tendency to depression, with delusions of a dismal character. If the delirium becomes higher, there are delusions of the senses, rapid changes of mood, and tormenting thoughts. The bodily condition is one of weakness and anæmia. Recovery generally sets in in from three to six weeks. The second, or melancholic form, is the commonest. Dr. Kirn collected twenty-two cases. It seems a kind of exaggeration of the depression and disquiet of the ordinary convalescence from influenza. Sleeplessness is the first striking symptom, then discontent, with reproaches against the attendants and distrust and suspicion against the physician. The patient is hypochondriacal, or fears ruin, loss of money, or loss of honor, and occasionally there are attempts at suicide, frightful hallucinations, painful delusions, and refusal of food. The prognosis is good. Recovery, as a rule, takes place in six or eight weeks, though it is sometimes delayed for several months. He studied six cases of mania following influenza. They presented the symptoms of simple typical mania without hallucinations and without delusions. The delirium generally commenced about a week after the invasion of the influenza. Recovery generally supervened in from six to eight weeks.

All observers hold, with this writer, that the toxic matter of the influenza has an injurious effect upon the whole nervous system, and that it acts most powerfully upon those who already have a hereditary tendency to insanity. He found that 54 per cent. of those who became insane labored under this predisposition.

Dr. Schmitz, in a paper on Insanity After Influenza (*Zeitschrift*, xlvii. Band, 3 and 4 Heft), gives as his conclusion that influenza is mainly an epidemic nervous disease.

In the *Deutsche Medizinal Zeitung*, in the *Deutsche Medizinal Wochenschrift*, *Allgemeine Zeitschrift für Psychiatrie*, the Glasgow *Medical Journal*, and in other German, English, Russian, and in several French journals of recent date, appear articles of similar tenor. In the majority of cases recorded, where insanity followed the attack of influenza, it was of the melancholic or hypochondriac form, preceded by acute delirium, and, as might be expected, the preponderance of this psychosis was in previously neurotic subjects. Insanity may come on at any stage of the influenza, but it usually appears during the period of convalescence, while the nervous symptoms set in at the beginning of the disease, or at any time during its progress or convalescence. The most marked and persistent sequelæ are insomnia, neuralgias, neuritides, and neuratrophia and its symptoms, neurasthenia and cerebrasthenia.

Dr. Julius Althaus, in a recent paper in the London *Lancet*, November 14, an excellent epitomized analysis of which appears in the editorial pages of the *Boston Medical and Surgical Journal* for December 10, on the neurotic character of the grip, says: "It is always a true nervous fever, the symptoms of which only differ as far as localization of the grippe-toxine in different areas of the nervous system is concerned, and that all the symptoms of the feverish attack of influenza are referable to irritant poisoning of a definite centre of the nervous system. Shortly after the visitation of influenza had commenced, a number of patients complained of severe forms of neuralgia, loss of power, and a general break-up of the nervous system, which they attributed to an attack of grip. Some of these patients had been in perfect health before, while in others a neurotic pedigree or a previous syphilitic infection, or some other constitutional fault could be clearly traced, upon which the subsequent nervous affection had, as it were, been grafted. In comparing those nervous troubles which may be met with after such diseases as diphtheria, typhoid fever, scarlatina, small-pox, measles, erysipelas, and malaria with those seen after influenza, it soon became evident that as a powerful etiological factor of all kinds and forms of nerve disease influenza stands *facile princeps* among all infectious fevers. A clinical survey of the symptoms of the feverish attack, such as headache, utter prostration of mental and bodily *strength*, *delirium*, *coma*, *convulsions*, etc., points unmistakably to the nervous system as their starting point. In the London epidemic, the fact that catarrh of the mucous membranes and pneumonia have been completely absent in a large proportion of cases, indeed, many patients have had influenza badly without having once coughed or sneezed, shows it to be not so much an infectious catarrhal fever, as has been generally assumed, as an infectious nervous fever." But the sneezing and catarrh, when they are prominent, do not militate against the conclusion of nervous implication, but only further prove it.

Dr. Althaus also remarks on the power of la grippe to revive a dormant syphilis, and to bring into activity certain syphilitic diseases of the spinal cord.

The similarity of the symptoms in all cases, are suggestive of grip toxine, as Althaus calls the poison of the epidemic, the neural symptoms being somewhat modified by climate.

The epidemic reported by Medin, of Stockholm, before the Tenth International Congress (*vide* "Transactions," and *Centralblatt für Klinische Medicin*, September 5th, 1891), in which within five months, forty-four cases were observed in previously healthy children, was probably a form of the grippe. In the febrile stage there was generally fever, somnolence, dyspepsia, constipation, rarely vomiting and diarrhœa, and paralysis.

The fever and somnolence lasted in some cases several days after the onset of the paralysis, but further paralysis did not take place after the fever had disappeared. Facial monoplegia was noted in three cases, and facial paralysis with poliomyelitis and polyneuritis in another five. Abducens paralysis was present in five cases, twice together with ordinary poliomyelitis, once at the same time as polyneuritis, once in a case of polio-encephalitis, and once in a fatal case. All the nuclei in the pons and medulla corresponding morphologically and physiologically with the cells in the anterior horns of the spinal cord, were at times affected.

In the discussion, Heubner characterized it as an infectious disease, and Henoch also spoke upon the striking identity of the cases and the presence of so many cerebral symptoms.

In the discussion before the Medical Society of London following the papers of Drs. Althaus and Savage, on December 14th, Dr. Symes Thompson, after remarking on the fact occasionally noted that a pre-existing insanity had also sometimes disappeared after the supervention of an attack of grippe, just as any great shock, such as a fall from a second story window, might drive away a brain trouble, and recording a case of herpes following the course of the fifth nerve after an attack of influenza.

His father, the late Dr. Theophilus Thompson, had collected much historical evidence on the nervous side of this ailment. In the epidemic of 1836 and 1837, the indications of its connection with nervous disease became clear. Graves probably was the first to point out, though Blackiston divided the honors with him, that the pulmonary affections were due to the removal of the nerve control from the lung—to a serious morbid influence on the vagus nerve. Again in 1847, Dr. Peacock drew attention to the fact that lowered vitality of the nerve centers was one of the chief characteristics of influenza. They had evidently noticed the points which Dr. Althaus had emphasized. His father had assumed that there might be some connection between the spread of the disease and the distribution of low forms of animal life; the microbic theory not then prevailing as it does now.

Dr. Symes Thompson considered that the cases of extreme dyspnœa in the early stages of the disease, without manifest pulmonary signs, pointed to lesion of the vagus nerve. He had seen two fatal instances from exposure to cold during the second week of the illness. Those cases of tachycardia in which the heart ran up to 200 or more per minute, and in which recumbency was so essential on account of tendency to cardiac failure, also pointed to nerve lesion, and Dr. Ord's recent paper on the cardiac conditions associated with gastric symptoms was worthy of thought in this connection. In influenza the gastric complications were of the nature of a crisis, and the attacks had something in common with sea-sickness, a desire to be left alone or to die being often expressed. Dr. Bezley Thorne held that the fever and the initial symptoms were matters of little importance, but that after the invasion was over the nervous system became occupied by a poison which might remain for weeks or years. One salient feature of this occupation of the nervous system by poison was a prolonged congestion of the vessels of the cerebro-spinal system. In early cases he had found that two-thirds of the females exhibited this spinal tenderness, while of the males one-third showed the same symptom; the disease, therefore, could not be limited in its incidence to the medulla oblongata. He had noticed radiating symptoms. If he percussed over the cervical vertebræ, pain was referred to the neck, and so on lower down the trunk. He held that every case should be treated as one of cerebro-spinal concussion, and kept in the recumbent position. He had known carriage exercise, prematurely indulged in, to produce neuritis, and he had observed loss of heart-power, or other symptoms of cerebro-spinal meningitis, to develop. Influenza was followed by a period of vital depression, which was one of great danger: the temperature might be markedly subnormal, and the condition of the patient so extremely weak, as to necessitate keeping them lying down.

Dr. Savage said it was remarkable how often of late he had noticed that melancholics with a rapid pulse had a previous history of influenza.

The nervous system of the eye in this disease has engaged the attention of Dr. John E. Weeks, who discusses la grippe, in the *New York Medical Journal* of August 8th, 1891, as a cause of retro-bulbar neuritis. The following are his conclusions:

1. Neuritis of the optic nerve due to la grippe is of relatively rare occurrence. It may affect one or both eyes, and may produce partial transient impairment of vision, partial permanent impairment of vision, or absolute permanent blindness. 2. Failure of vision begins from 3 to 14 days after the commencement of the attack of la grippe and proceeds quite rapidly. 3. The form of scotoma produced is probably dependent on the position of the neuritis in the course of the nerve from the globe to the chiasm. If immediately behind the globe, the muscular fibres are affected; if near the optic foramen, the peripheral fibres suffer first. 4. Treatment has little effect to promote cure. If recovery follows, it takes place spontaneously and accompanies improvement in the patient's general health. 5. The neuritis of motor nerve branches resembles those occurring after diphtheria and are mostly of transient character. They may occur in any or all of the nerve trunks pertaining to the eye.

The epidemic in St. Louis has been associated with a great deal of pneumonia, likewise in St. Paul, Kansas City, Louisville, and Cincinnati, a likely complication in these Mississippi, Missouri, and Ohio Valley cities where malaria adds its depressing influence on the central nervous system to that of the grippe toxine or microbe. In Cincinnati, the veteran and accomplished editor of the *Medical News*, Dr. J. A. Thacher, recently very suddenly died of pneumonia and vagus paralysis after a few days of this disease.

Dr. Helfer Jahrbuch reports a case of astasia-abasia resulting from the epidemic, and I am not certain that the influenza has not been the cause of a case now under observation in which I am undecided as to whether the apparent motor paresis is due to the cord or to neuritis.

The marked feature in my observation of this unique malady is the disposition it displays to bring out latent morbid predispositions.

Without a wearisome detail of cases, I may simply say that it has brought back to my office perhaps five per cent. of my dismissed cases of neurasthenia, neuralgia, and neuritis, a number of cases of previously recorded insomnia, and caused a relapse of some cases of syphilis of the nervous system; while the number of cases of malarial rheumatism and malarial neuralgia brought into activity in persons previously exempt, has been one of the remarkable facts of this singular epidemic.

I have known cases of syphilis to return in cerebral and neural form after many years of quiescence, under its quickening influence.

It does seem that this poison tends to so weaken the nutrition of the nerve centers that normal resistence to inherent, but abeyant, neurotrophic tendencies is destroyed, and subdued nerve instability breaks out anew in acute form.

In the discussion before the London Society already alluded to, Dr. Althaus referred to a case in which a man, after two attacks of influenza, became melancholic and hemiplegic, passing into a condition of general paralysis of the insane. Another patient of temperate habits, after an attack of influenza, developed a complete left hemianæsthesia. From this he recovered, but he has since died with all the signs of spastic spinal paralysis, which had developed much more rapidly than was the case in syphilis, and very justly concludes that while we had to deal in these cases with a large amount of local nerve disturbance, it was also combined with central nerve disturbance, and it is this central nervous disturbance which brings into re-awakened activity the quiescent morbid tendencies, a previously subdued neuropathic instability, or excites in previously healthy nerve centers a diseased action *de novo*.

From a consensus, therefore, of all experience, it is plain that the influenza belongs more especially than elsewhere, in its symptomatology, at least, to the domain of neuropathology, whatever may be its *materies morbi*, or microbe.

Following are briefly some of my cases:

A young man, aged 22, had the influenza last year, and again this year one month ago. Since the first attack he has been unfitted for business, has been debilitated and more sleepless than formerly. No pains, but simply general neurasthenia. Appears in good flesh.

A contractor, aged 51 years, was never sick or incapacitated for business before an attack of la grippe a few months ago. Since then, insomnia, vertigo, and a constant tired feeling with inability to fix his attention on business, and the return of an old intermittent, have compelled him to give up his business.

A traveling salesman, aged 52, two months after grippe, has persistent vertigo, insomnia, lumbar pains, and constant aching in the dorsal spinal region, so that he seeks treatment and gives up his business.

A railway-car inspector living in East St. Louis, aged 54, after grippe two months ago, has an old ague return, with loss of appetite, jaundice, and hæmaturia, notwithstanding active anti-malarial treatment.

A railway employee, forty years of age, convalesces from it with chronic lumbago and sciatica.

A married lady, mother of two children, having recovered two years ago of vertigo and the morbid fears of neurotrophia, after an attack of the prevailing epidemic, has a return of all her former symptoms.

A middle-aged business man of large affairs, after an attack of the grippe, comes to me with vertigo, insomnia, pains in limbs, and glycosuria, the latter disappearing after several weeks of treatment.

The brother of the above, two years older, in very active business, three weeks after the grippe, has constant aching over dorsum and sacrum, loss of appetite, and nervous debility.

In my own person, after slight attack of grippe in Boston, in August two years ago, hay fever symptoms appeared and persisted for some weeks, followed later by sciatica and abdominal neuralgia—symptoms to which I had hitherto been an entire stranger through life; and my wife remarked to-day that she had not seen a well day since "that attack she had, whatever it was," two years ago. It was the grippe, a former neuritis returning and persisting.

My son, Ray, was suddenly attacked two years ago by the epidemic, and these were his symptoms: high fever, temperature, 104 Fah., intense head pain, pain in ears, delirium, constipation, insomnia, severe aching in back and limbs, thirst, highly colored and scanty urine, and dry skin.

These symptoms were actively treated with phenacetine and quinine the first day, bromide of sodium at night, one dose salicylate of sodium the second day, with quinine (five grains) and bromide of sodium at night. Later ten grain doses of salicylate of sodium were given every three hours (large doses for a child). All symptoms had disappeared by the third day, the fever left him after the first twelve hours, so that his brain was saved.

This outline of treatment is, in substance, the plan pursued in the acute attacks of all my cases, with the addition, sometimes, of special medication for complications and sequelæ.

A lady of fifty-two years of age, after two successful excisions of the mammary gland, twelve and thirty months ago, without apparent return, after an attack of grippe, developed diabetic melancholia four months ago with delusions of impending destruction by electricity, and loss of her bowels. The uterus and ovaries appear healthy, and the delusions and depressions have, for the time, disappeared under treatment and removal from home, a fact which contra-indicates the metastasis of the cancer to the brain. Neuropathic and psychopathic instability exists in her family, another fact which contra-indicates metastasis.

A lady after confinement and a seizure of the grippe, develops insomnia, extreme irritability and aversion to her husband, modified, but not subdued by *codia*, hypophosphites, chloral, and tonics, but not yet overcome ten weeks from the attack.

A merchant in Iowa, two months after the grippe is melancholic, sleepless, and gives up business. He improves by leaving home, and going under treatment, but is still anæmic and neurasthenic.

A patient who previously has had an eczema, has it return on him after an attack of influenza.

A patient who comes to me with cervical meningomyelitis, and associated neuritis, and convalesces with partial paralysis of the left arm, has a history of an obscure and painful febrile attack in which boils or carbuncles (differently described by the two physicians who attended him) appear over his neck and body. The grippe was prevailing extensively in both places at the time of his sudden illness, six months ago.

A child of six years after an attack of influenza, develops epilepsy. His father was an inebriate and nervous.

Of varying forms of bulbar paralysis recently under my care, several of them have been directly traced to the prevailing epidemic as the exciting or final cause, at least.

One of these was a physician, surgeon-in-chief of an important railroad system, in which this cause superadded to over mental work precipitated the paralysis, death resulting from pneumo-cardiac failure due to vagus paralysis after convalescence from the other bulbo-paralytic symptoms.

In another case, after about four months from the decline of the acute symptoms of the influenza, aphasia and glossopharyngeal paralytic symptoms set in, an old, long dormant syphilis being awakened into activity.

Another venereal patient who thought himself cured years ago, four months after the invasion of influenza, is now under treatment for hesitant speech, mental incapacity for his accustomed avocation, extreme nervous irritability, and general neurasthenia with enuresis, but no sugar or albumen in urine. Six months after the invasion, another case, after much improvement in the pharyngo-laryngeal and gastric enervation, shows persistent symptoms of general neurasthenia, with some neuritis.

Another patient shows hesitating speech, partial dementia, unequal pupils, one largely dilated, and paresis, with great self satisfaction, though incapacitated for business. Later partial epilepsia appears giving a suspicion of a revived neural syphilis.

Still another with a former history of venereal poisoning, had speech failure, insomnia, and unsteady gait, but is now convalescent under persistent specific treatment, quinine, phenacetine, and electricity.

In short, the tendency of this toxic inflammatory neurosis is to shatter the nervous system, central and peripheral. It is a severe strain on the inherent *vis medicatix* which normally resides in the nerve centres. It tears open old neural wounds that have once healed, and causes new ones to appear. It stirs up the neuropathic pool, which is no pool of Siloam to the unfortunate victim. A Pandora's box of neuropathic woes seems to open after its advent, and not to close with its departure. And while Althaus has called attention to the resemblance of grippe in its behavior to that of syphilis of the nervous system, many other observers, like Dr. Weeks, have likened its neuropathic sequences to the sequelæ of diphtheria as regards their amenability to treatment and tendency to ultimate recovery under proper treatment. This is my own view and experience also. It seems to be rather ad-neural than intra-neural in its effects upon the central nervous system, the bacillus of Teissier and others (if it be due to a microbe) producing an adventitious rather than intra-neural effect which seems capable, in most cases, of removal; such, at least, has been the practical experience of others as well as myself, judging from the yielding of the neuritides generally, and often of the paralyses to treatment.

In conclusion, the lesson I think I have learned from personal observation of this epidemic in its effects upon my own patients is: That it is, in its incipiency,as well as its sequences,a toxic neurosis; more largely ad-neural than intra-neural (though the fatal ending of Althaus' cases of paralysis would point to intra-neural lesion, also); that the neuropathic lesions, central or peripheral, are rather more prone to recovery than other similar and apparently as grave nervous lesions occurring before the epidemic appeared; that its neuropathic sequences act more like the post-diphtheritic nervous diseases in regard to curability; and that it brings to the surface and into vicious activity latent neuropathic and other organic morbific aptitudes.

The *rationale* of its successful treatment consists in anticipating and combating whatever disease the patient may be prone to: gouty, rheumatic, malarial, or venereal.

The best medicines in its treatment in my hands have been phenacetine, quinine, the salicylates, iodides, and bromides, according to the prominence of symptoms. Generally phenacetine and quinine in the beginning for two days, with bromide of sodium at night, drachm doses; after the second day, the salicylates and iodides, continuing bromides at night so long as there is restlessness or insomnia, and the phenacetine so long as temperature may be exalted, and also always an initial mercurial cathartic or laxative.

This therapeutic outline being modified according to the *rationale* of recurring or continuing indications.

ACUTE RHEUMATIC NEURITIS.

BY J. D. THOMAS, M.D.,
OF PITTSBURG, PA.
PROF OF GENITO-URINARY AND VENEREAL DISEASES, WESTERN PA. MED. COLLEGE; SURGEON TO SOUTH SIDE HOSPITAL.

The following cases may be of interest.

About eight years ago I was called to see a patient, male, aged 30 years. He complained of intense pain at the tip of the left shoulder. On close examination I found that the seat of pain did not cover an area larger than a silver half-dollar at the end of the acromial nerve. Accompanying this pain there was quite a high temperature—103°F. Pressure through the shoulder-joint did not elicit pain; no pain elsewhere. I prescribed morphia and aconite. The former in sufficient doses to relieve the pain. While under the influence of the anodyne the pain was mitigated, but as soon as its influence passed off the pain returned in its previous severity. The aconite did not reduce the temperature. Quinine was administered but it did not reduce the temperature or relieve the pain. This line of treatment was carried out for several days without improvement in my patient; the morphia being the only remedy of any service, and it controlling but the one symptom of pain. The case did not appear to be one of ordinary neuralgia owing to the elevated temperature and abrupt onset. Neuritis suggested itself, but the clinical history and other features excluded this diagnosis. Thinking the case might be one of rheumatic character I prescribed large doses of salicylate of soda. The result was prompt and brilliant. The pyrexia disappeared and the pain vanished.

During the past winter a gentleman, 58 years of age, sent word one evening that he was suffering with a pain in his left shoulder and desired me to send him a prescription. The prescription sent called for a liniment composed of tinct. opii, tinct. belladon., and linimentum ammon. The next morning a message was left to call and see the patient, as he was no better. On making my visit I found that he had passed a restless night, and movement of the shoulder caused an exacerbation of the pain. With some difficulty the clothing was removed in order that a thorough examination might be made. In this case I found the symptoms identical with those of the above case, with the exception that the temperature was not so high. Salicylate of soda afforded prompt relief and soon cure.

Intervening between these cases I saw two other similar ones, but as they are not sufficiently distinct in my memory I am unable to particularize.

On Tuesday, April 14, 1891, I was called to see Albert M., aged 12 years, and received the following history, viz: On the previous day he was seized with pain in the left leg; this pain became so severe that he was unable to move the limb, which was kept slightly flexed, and when this position became irksome, to change it required the assistance of his mother, and was accomplished with much pain. The mother thought these pains were only "growing pains" and applied some liniment. On the morning of the day of my first visit the pains left the left leg and abruptly attacked the right one. He could now move the limb first effected without pain, some stiffness only remaining. Before examining the right limb and while getting the above history, I took the temperature and found it to be 101.5°F. When the bed clothing was removed the patient shrank from dread of my touching the leg. After assuring him I succeeded in ascertaining that the tenderness was along the entire length of the sciatic nerve as well as along the anterior crural. There was also some tenderness along the lower portion of the spine. None of the joints were involved. Recognizing this case as being similar to the cases narrated I, however, did not place him upon the salicylate but resorted to experimentation in order to exclude spinal congestion and acute neuritis, diseases that suggested themselves, although there were no disturbances of motility and sensibility, only so far as pain was concerned. The nerve symptoms were also too acute for such diagnoses. I put him upon ergot, aconite and bromide of potash, with counter-irritation to the spine. The next day there was no improvement, and he had passed a sleepless night. My previous prescriptions were continued and supplemented with one containing chloral. Hot applications were also to be applied along the painful nerves. When my third visit was made, I found that the chloral had produced some sleep, otherwise there was no improvement. At this visit all of the remedies were withdrawn excepting the chloral, and as the bowels were not moved a cathartic was ordered. On making my fourth visit things were *in statu quo*. I now placed him upon salicylate of soda alone, ten grains every three hours. On making my fifth visit, as I entered the room the patient greeted me with a smile and said he felt well. He could now move both legs, the right only a little stiff, and I could resort to deep pressure over the effected nerves with the result of only causing a feeling of soreness. The patient was out riding in three days.

Headache was not a marked symptom in any of these cases.

In looking over text-books and consulting various authorities, I fail to find a description under any heading covering the cases here presented. The disease is not a new one, for my cases presented themselves at different times within a long period of time—it simply passed without recognition and description. Even that acute, accurate and pains-taking observer, the late Austin Flint, makes no mention, in his article on acute rheumatism, of this type of rheumatism which I have designated as acute rheumatic neuritis. The points of analogy between this disease and rheumatic fever are: 1. The rather sudden onset. 2. The elevated temperature. 3. The severe pain. 4. The leaving of one nerve abruptly, and flying to another, and 5. The rapid improvement under large doses of salicylate of soda.

Pittsburg, May 15, 1891.

THE DISEASE OF INEBRIETY IN ITS RELATION TO DISEASES OF THE MIND AND NERVOUS SYSTEM.

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Dipsomania is a form of physical disease, and it consists of an uncontrollable and intermittant impulse to take alcoholic stimulants, or any other stimulant or narcotic which causes intoxication. We must distinguish between this disease of the nervous system, which is one form of periodical insanity, and the physiological state in which the individual merely chances to indulge in liquor to excess. The great question of importance is to distinguish the two states or conditions when the result—intemperance—is the same. We must observe whether there are symptoms in our patient which can be referred to primary disease of the nervous system. We must examine for hereditary influences, which, when present, lead us, of course, to suspect disease. Early development of the appetite for stimulants points in the same direction; but the great diagnostic mark attending the *disease* is the irresistible impulse or craving, by which the patient is impelled to gratify his morbid propensity, being, during the paroxysm, blind to all the higher emotions, and pursuing a course against which reason and conscience alike rebel. There is a compulsion of disease toward intoxication which cannot be resisted. These paroxysms are preceded by considerable disturbance of the nervous system. The patient perspires and is sleepless, uneasy, and prostrated, and so craves some stimulant.

Between the paroxysms he is different from a common drunkard, in oftentimes disliking exceedingly all stimulants, and is then a useful member of society. The patients with whom the medical profession will come in contact as sufferers from this disorder of the nervous system, are not from the lower classes, as many suppose, but come chiefly from the brain-working and cultured classes, and embrace lawyers, physicians, clergymen, and merchants. Dipsomania has been described under three forms: acute, periodic, and chronic. The acute form is the rarest, occurring only after exhausting diseases or excessive sexual indulgence. The periodic form is by far the most frequent, and is observed in persons who have suffered injury to the head or spine, females during pregnancy, and at the catamenial period, and also in men whose brains are overworked.

This form is frequently hereditary, and, consequently, proportionately difficult of cure. These patients may abstain for weeks and months from all stimulants, and may, during this interval, positively dislike them. At last, however, the patient becomes uneasy, listless, and depressed; is not inclined to apply his mind, and finally begins to drink and continues until intoxicated. It is an interesting and rather remarkable fact that with this class of cases, as Charles Lamb, in his *Confessions of a Drunkard*, pertinently remarks: "To stop short of that measure which is sufficient to draw on torpor and sleep, the benumbing, apoplectic sleep of the drunkard, is to have taken none at all. The pain of the self-denial is all one."

The patient continues this course for ten days, or perhaps a fortnight, and then bitterly regrets his fall. This often runs on, if not checked, into mania, and lapses into dementia. The last, and a very common form also, is the chronic form; and we have always found this to be the most incurable form of the disease, as the patients are incessantly under the irresistible desire for alcoholic stimulants. I think the latter class of cases require constant seclusion in an asylum if they wish to be free from intoxication, as a discharge or leave of absence is always followed by a repetition of the same acts. In a majority of cases of this nature, we find hallucinations of sight and hearing, which oftentimes produce very painful moral impressions, and at times even great terror in the patient. Cases of delirium tremens are excluded in these remarks.

These patients manifest confusion of thought, perversion of feeling, suicidal tendencies, tremors of the facial muscles and tongue, anæsthesia of the extremities at times, and very often paralytic symptoms, going on to general paralysis. The subject of hereditary metamorphosis of the diseases of the nervous system is of great importance in this connection. As a result of intemperance in the progenitors, we find transmitted to the offspring allied but different forms of the neuroses. It may be dipsomania, epilepsy, chorea, or actual insanity, or a proclivity to crime. It is, at all events, an aptitude for some form or other of nervous disorder, the particular form being often determined by causes subsequent to birth. The law of hereditary transmission applies equally to the victims of dipsomania as well as to the other insane classes, and is to be studied, I think, in three divisions, according as it is manifested. First, in predisposition or simple aptitude, the result of a defective organization, and a weakened or diseased nervous system, as a result of which the possessor is predisposed, or has a tendency to seek for the relief obtained temporarily by alcoholic stimulants, when laboring under physical or mental depression: second, in the latent state or germ of this disease: and third, in the actually developed disease. The first of these states, the predisposition or aptitude, being hereditary in a strong degree, is universally acknowledged to be the most difficult to eradicate, and requires the wisest sanitary conditions adapted to both body and mind. Most people doubt the existence of the second or latent state or germ of the disease, ignoring the law of progressive development, and such persons find it difficult to believe that dipsomania coming on in maturity, as a result of ill-health, mental shock, etc., may have originated in intemperance in the parent or grandparent. Yet this is a fact, and is just as easy of comprehension as the fact well known to neurologists, that brain-tissue degenerations and mental diseases may be separated by long intervals of time from the too premature and intense stimulation of the brain in the young, which causes these nervous diseases. One very important organic law which should be universally understood in this connection, is, that morbid impulses and characteristics and traits may disappear in the second generation and break out with renewed intensity in the third, although a tendency or predisposition may be transmitted to the offspring, and under good hygienic and other favorable circumstances die out and fail to be transmitted any further. I have remarked in my experience with the insane, whether the exciting cause be intemperance or something else, that the cases most unlikely to recover are those where the insane temperament or diathesis is clearly marked, and where the predisposition to disease is inherited. Such patients, although they may have lucid intervals, rarely, if ever, entirely recover.

I think the insane impulses to drink, which overcome all the efforts of the individual who inherits a tendency in this direction, present the same indications for treatment as do the suicidal and homicidal impulses, namely, seclusion from society, and the occasion of temptation, and the necessary restraint in a suitable institution. I do not agree with that class of persons who hold that, under all circumstances, the dipsomaniac is to be treated as an invalid, with the utmost gentleness and forbearance, and then, with the strangest perversity, turn round and tell you that inebriety is no excuse for criminal action, and fine and imprison, perhaps, the unhappy man who has been driven into the debauch by an irresistible craving for drink, when properly he should be treated as insane, and should be sent to an inebriate hospital for restraint, treatment, and cure. There are some people who appear to think it no disgrace for the head of the family to leave his home and business and insanely hide himself away in the slums of the city to drink until intoxicated, and continue this course for several days, and repeat this every three or six months until health, business, and family ties are ruined; but who would foolishly look upon it as a great disgrace to send him away from home for the proper medical care and attention and restraint necessary for his restoration. It should be the province of every conscientious family physician to educate those families committed to his charge respecting their duties in such cases, and to instruct them that *inebriety is a disease curable as other diseases are, if the patient will but submit himself to the proper restraint for a sufficient length of time to be cured.* Our laws at present fail lamentably in preventing intemperance, and this is due in a great measure to the false view in which this disease is held by the judiciary. The different forms of dipsomania correspond in their manifestations, and oftentimes in their causes to other cases of mental disease, and cannot properly, I think, be separated from them as regards the fact of the disease.

Dipsomania often appears as a result of the same causes that operate in the production of other types of mental disease, such as ill-health, severe mental shock, blows on the head and spine, and sunstroke. We are dealing in both cases with abnormal cerebration; in the one case associated with mania, melancholia, dementia, and idiocy; and in the other with a depraved alcoholic appetite—an irresistible impulse which the mind seems powerless to control; an insane impulse, just as surely as a homicidal or a suicidal impulse is an insane impulse. I think that when our cerebral pathology, which is as yet in its infancy, becomes more generally understood, it will be found equally applicable to this as to other forms of insanity. The terrible insane craving for alcoholic stimulants is often the result of a lowered vitality or abnormal organic development of the nervous system that has descended from generation to generation, gaining in intensity until it manifests itself by the complete loss of self-control and active inebriety in children and grandchildren, after they once taste intoxicating liquors and indulge in them.

The blunted moral perception which so many inebriates exhibit, and which renders them peculiarly liable to a relapse after they leave an asylum, is to be regarded in the same light, I think, as the perverted moral sense in moral insanity. In every institution for the insane we find inmates who exhibit no obvious intellectual aberration or impairment, the *moral* faculties being deranged, while the *intellectual* faculties remain apparently in their normal condition. The manifestations of moral insanity may be a simple perversion of some sentiment or propensity under certain exciting causes; and I think this exactly comprehends cases of dipsomania with loss of self-control and perversion of the moral sense. The person, of course, is aware that the act is wrong in both instances, but the control which the intellect exercises over the moral senses is overborne by the superior force derived from the disease. I have been told many times, by both insane patients and dipsomaniacs, that the feeling on the one hand to commit some insane deed, and on the other to give way to alcoholic appetite, was contemplated in both instances with horror and disgust, and at first successfully resisted, until at last, having steadily increased in strength, it bore down all opposition. What can be a more powerful argument in favor of the disease theory of dipsomania?

Pathology of Dipsomania.—The basis of our cerebral pathology is the fundamental principle that healthy mental function is dependent upon the proper nutrition, stimulation, and repose of the brain; and upon the processes of waste and reparation being regularly and properly maintained. We know that the cerebral cells are nourished by the proper and due supply of nutritive plasma from the blood, and that this is essential to healthy function; and, indeed, the ultimate condition of mind with which we are now acquainted, consists in the due nutrition, growth, and renovation of brain-cells. If, now, we take into the system an amount of alcohol that causes the blood plasma to convey to the brain-cells a noxious and poisonous in place of a nutritive substance, stimulating the cells so as to hasten the progress of decay and waste beyond the power of reparation, and impressing a pathological state on them, we must inevitably have resulting a change of healthy function and a certain amount of disease induced.[1] Owing to the abuse of alcohol we have resulting a change in the chemical composition of the cerebral cells from the standard of health, which is the foundation of organic disease, as it prevents and interrupts healthy function. As a result of the overfilling of the cerebral vessels or hyperæmia of the brain from the long-continued use of alcohol, we have at first symptoms of irritation, due to increased excitability of the nerve-filaments and ganglion-cells of the brain. The symptoms of exhaustion and depression occurring at a later stage are due to lost excitability of the nerve-filaments and ganglion-cells of the brain, owing to a want of a proper supply of arterial oxygenated blood to them. This is caused by the excessive cerebral hyperæmia, the escape of venous blood from the brain being obstructed; the result being that no new arterial blood can enter the capillaries. We may have apoplectiform or epileptiform attacks, and paralysis occurring in the course of these cerebral hyperæmias, and they may be due either to obstructed escape of venous blood or to secondary œdema of the brain, in which transudation of serum takes place into the perivascular spaces and interstitial tissue of the brain with consequent anæmia. Until very lately we have known little respecting the pathology of the nervous system, and consequently comparatively little information has been gained regarding the morbid changes that take place in the brain and its appendages as a result of the abuse of alcohol. Such knowledge in this direction as we do possess, shows that analogous changes take place in chronic alcoholism and chronic insanity—namely, atrophy and induration of the brain, and thickening and infiltration of the membranes. The nerve-cells have also been found to be the seat of granular degeneration in some instances, and some histologists have claimed to have discovered fatty degeneration of the various brain elements. Respecting the latter changes, Dr. J. Batty Tuke, of Edinburgh, who is one of the most successful of modern investigators in the department of morbid cerebral histology, gives it as his opinion that the application of the various tests for oil will fail to detect the presence of the so-called "free oil-globules" in the substance of the convolutions, which he considers to be but the scattered débris of granular cells. We find thickening and increase of the pia mater and arachnoid, and permanent infiltration of the former and a varicose condition of its vessels, as a result of continued abuse of alcohol. As the state of the pia mater is unquestionably closely related to the higher functions of the brain, the latter must suffer more or less as the result of such an abnormal condition of the former. If there exists a permanently congested and thickened state of the pia mater, it is extremely probable that if it becomes suddenly turgid and hyperæmic as a result of severe emotional disturbances, we shall have, resulting from the increased pressure on the brain, coma, epileptiform and apoplectiform attacks and other grave nervous symptoms. It is fair to conclude that in the majority of cases the first changes that occur are repeated attacks of active cerebral congestion, followed by chronic cerebral congestion and chronic cerebral meningitis; and that, as the disease assumes a chronic form, the brain takes on a secondary change and becomes anæmic, atrophied, and indurated—a state allied to cirrhosis. In these cases of chronic meningitis proceeding to atrophy and induration—of which I have seen quite a number—the prominent symptoms have been impairment of memory, dullness of intellect bordering on dementia, trembling of the limbs, *tottering gait, hesitating slurring speech*, and other symptoms indicative of gradually progressing paralysis.

In making autopsies, where the cause of death has been owing directly or indirectly to the abuse of alcohol, I have found cirrhosis of the liver, fatty and waxy liver, cancer of the liver, chronic Bright's disease, cancer of the stomach, and cancer of the bladder, and, in one case, a gummy tumor of the dura mater.[2] It is doubtless true that in many cases we shall find upon examination no pathological changes in the brain that are demonstrable by existing knowledge and appliances; but I think we should rather doubt the quality of our resources of observation than doubt the existence of pathological changes in this most delicate, sensitive, and complex of all organs when we have observed during life its functions to be obviously perverted, if not destroyed. Having endeavored to prove that dipsomania is a physical disease—that it is, in fact, a distinct type of insanity, I pass in conclusion to the consideration of the care of dipsomaniacs. Dipsomania, which I class as a periodic insanity, is more troublesome to manage than simple insanity, and requires, I think, a more perfect discipline, both moral and physical, than the latter.

In the treatment of inebriates we have primarily to build up and restore shattered constitutions and broken-down nervous systems. We have a class of patients to deal with whose digestive powers are weakened, whose appetite is impaired, whose muscular system is enfeebled, and whose generative function is often decayed; the blood is impoverished and the general nutrition is disordered. They are indirectly predisposed to the acquisition of nearly all diseases, as they have, by long indulgence in alcohol, lessened the power of resisting their causes. We have to deal with the results of a toxic poison, which has resulted in more or less pathological change in the brain and nervous centres. We have also to deal at times with various complications proceeding from the abuse of alcohol, such as cirrhosis of the liver, gastritis, epilepsy, various forms of dyspepsia, and, in some cases, with Bright's disease. We must place our patient under the most favorable hygienic influences, provide for him cheerful, tranquil, and pleasant surroundings, repress cerebral excitement, procure sleep for him, and an abundance of fresh air and exercise. A permanent recovery depends largely upon allowing sufficient time for restoration of nerve-power, mental tone, and physical vigor, and complete recuperation of the will-power. After a few months of systematic care, judicious restraint, and enforced abstinence from the occasion of temptation until the will-power has been restored, my patients have generally recovered and have been restored to society, and I have had a very gratifying degree of success in my treatment of dipsomania. We must stimulate inertia, resist every kind of perverted feeling, and check morbid impulses; and at last we may, if we exercise a wise care and discrimination, restore our patients to their homes and to society, permanently cured. In building up the system after the wonted stimulus has been withdrawn, which is invariably from the first, and in combating the nerve-exhausting tendencies which are always present in a marked degree in such cases, in addition to nerve sedatives and tonics, we have had surprising results from the use of electricity to the brain and spinal cord, and by its use we avoid the terrible nervous prostration, which, as it is well known, follows the withdrawal of liquor from an inebriate. Our patients who have applied in fear and trembling, dreading the ordeal they must pass through in the beginning of treatment by reason of such withdrawal, have been as much surprised as pleased to find the use of electricity supplied to the nervous system an agreeable and invigorating substitute for the stimulus which they were debarred from using, in such a marked degree that little or no suffering was experienced. As I have found that strychnia was a physiological antagonist to alcohol, I have used it largely and successfully in the treatment of dipsomania. I give from $\frac{1}{60}$ to $\frac{1}{32}$ of agrain, thrice daily, in combination with quinia and tincture gentian comp., so that my patient takes one or two grains of quinine before each meal with the strychnia. This makes a pleasant bitter tonic, and one under which patients recuperate quickly.

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[1] It would seem most probable that the disease of inebriety arises from disorder in the sensory zone of the brain. We have in this disease an unnatural diseased appetite or taste. Molecular changes, or a sub-inflammatory irritation of the temporo-spheroidal lobe in its lower parts (the differentiated centre for smell and taste) would naturally produce [illegible] taste and prevert it, inducing that periodic in- [illegible] its train of unnatural, inordinate cravings; [illegible] ion of normal nerve-function. The *disease of inebriety*, and the alcoholic diathesis, depends, I believe, and is the result of, *some morbid irritation of the cortical sensory centres.* I think we have good reason for believing this, and its acceptance by the profession, as a disease of certain parts of the brain (*a thing no more difficult of belief* than that insanity, with sensory hallucination, is the result of a similar lesion), probably dependent upon special molecular changes, perverting brain-function, a condition markedly hereditary, as are most abnormal conditions of the centric nervous system, and evinced outwardly by great nervous irritability or restlessness, unnatural sensations, an uncontrollable desire for alcoholic stimulants, and a disposition to frequent fits of intoxication (the more prominent *symptoms of this neurosis*) would do much to render a hitherto vexed question conclusive and scientific.

The pathological evidence in favor of the fact that a departure from a healthy structure of the nervous apparatus exists—as in mental disorders—in dipsomania, was at first slender, has been yearly increasing, and is to-day unanswerable and conclusive. I also claim that, with the *important* and *essential aid of private hospitals*, we can successfully antagonize the force of this disease and cure it, by restoring to its normal condition the molecular nerve structure as in case of insanity. The treatment of this disease, therefore, is worthy of the highest consideration of the entire profession. I have treated many very brilliant professional and business men (for it is the finely organized brain and not the coarsely developed one that is affected by this disease) in my sanitarium, and by isolation, complete mental rest, the removal of all care and responsibility, a complete control on my part of my patient's habits and surroundings, and the use of quinia, strychnia, zinc, and electricity. I have sent these men, and not a few women, back to their places in society and business permanently cured, so that they have achieved honor and success. The term "drunkard" is worthy alone of the dense ignorance of fifty years ago respecting this disease. It is a misnomer. These persons are suffering from a type of mental disease. They want to be cured, and they *can* be cured, and it is the fault of the physician if they are not.

[2] This I consider as due to syphilis.

The Causes of Premature Mental Decay and Nervous Exhaustion, induced by Dipsomania, and their Treatment.—Dipsomania as a disease will never, in common with other insanities, die out until the Anglo-Saxon race succeeds in producing, what it does not now produce, a physique and brain capable of meeting successfully the demands that our climate and civilization make upon it. To do this requires a bringing up of the physical tone of the American women, so that the conformation shall be what it should be for the best propagation of the species, and that she shall have what she has not to-day, the ability to furnish a suitable supply of wholesome nutriment for her offspring, as is the case with German, English, Scotch and Irish women. To-day the vital temperament is too predominant and too active, so much so as to require an undue proportion of the nourishment of the body. Nothing is more certain than that the physical development of most of our American women differs very materially from the physiological standard upon which the true law of increase is based. The remedy for all this lies in the hands of the general family practitioners, and it is to the subjects of diet, fresh air, sleep and tranquility of life of the young of the present generation, and to the general training of the young in educational institutions, that we must look for the production of a better type of physical and mental stamina. Parents should be taught that for their growing girls in high schools *more than two hours' study out of school* generally means weakened eyesight, headache, loss of physical vigor, loss of sleep and appetite, and disorders of menstruation. I think that the influence of physical culture, especially applied to women, and its influence on the body cannot be overrated, and that by due attention to this we shall see our young women graduating with health, good muscular development, and an abundance of vitality stored up for the trying duties of maternity, and with the greatest possible harmony of action between the physical and mental organization, tending to good health, and healthy progeny.

Physiology points to the necessity among our American women of a better developed physical system, more evenly-balanced in all its parts or organs, for a greater harmony in the performance of all their functions, especially in reference to what may not be termed the primary laws of nature, so that their children may not be weighed down in the struggle of life with a defective organization, but be blest in the inheritance of a perfect anatomical and physiological structure in all its parts and organs, with a resulting harmony in the performance of all their functions, with perfect mental and physical health and immunity from the host of nervous diseases that affect so large a proportion of our people. It may seem as if an undue amount of attention is spent in the consideration of this question, but having, by reason of my specialty, devoted much time to the study and investigation of hereditary disease, I am firmly impressed that in order to eradicate dipsomania and allied nervous diseases, and to check the increasing tendency to physical degeneracy among American people, we must aim at the extirpation of radical defects in physical organization. At present the average number of children to each American family is steadily decreasing with each generation, and the children that are born exhibit a want of vitality, a want of stamina in the constitution, and such a predominant tendency to physical degeneracy as threatens seriously, it seems to me, the perpetuity of our native stock.

The pathology of the production of dipsomania, as well as most other nervous diseases, consists, primarily, in an interference with the proper nutrition of the cerebral tissues of the fœtus, so that even during embryonic life, the brain undergoes pathological changes, which induce deficient moral power, mental weakness and a predisposition to the acquisition of all forms of nervous disease, there being an ill balanced and defective state of the whole central nervous system. These diseases would cease to exist if a true, healthy civilization prevailed; but inebriety, in common with other nervous diseases, owes its origin to an artificial type, from wrong habits, pernicious customs and fashions, and from an unnatural culture and refinement where the laws of health and life are altogether too much violated. These diseases have not been the growth of one generation, but of many, and by the laws of inheritance have become greatly increased and the effects intensified. To eradicate these evils and to perpetuate the race as it should be, there must be sound and healthy stock, and not organizations impregnated from their very origin with the seeds of disease and premature decay.

We find in dipsomania the general symptoms of exhausted nervous power, viz.: general debility of the body, inability to walk even short distances without fatigue, general feeling of languor, unwillingness to make any active exertion, great tendency to sweat, more especially at night, but also induced during the day by the slightest exertion, and often an unsteady gait. I have found these patients exceedingly prone to neuralgia. The explanation of this is probably due to the fact that there exists in such cases a warm, irritable, hypersensitive condition of the sensory nerve-cells of the central sensory tract, which is the sole seat of true nervous sensibility. The central nervous system is affected, beyond all doubt, by excessive drinking, and the degeneration thus produced, I regard as a powerful predisposer of neuralgia of the inveterate type. Aside from the direct influence impressed on the nerve-centres, I think that this irritable and hypersensitive condition of the central sensory tract is often induced by visceral irritative disease of the stomach, kidneys or liver, so frequently existing in inebriates, which almost necessarily affects the sensory nerves which ramify in these organs, and from these diseased nerves a more or less steady stream of irritative and wearing nervous impressions is transmitted, practically without cessation, to certain parts of the sensory tract, to which the sensory nerves from any given part may go, and as a result, sooner or later the central sensory nerve-cells are brought into that degree of nutritional disturbance which is the fundamental factor in neuralgia. The real seat of these severe neuralgias, from which so many dipsomaniacs suffer, is rarely, if ever, in the peripheral nerves of the affected region, but in the central nervous apparatus.

The heart's action is weak, often irregular, accompanied by palpitation, and not unfrequently with symptoms of indigestion. A change has also come over the man's mind, so that the very *morale* is changed. At one moment he may be very joyous and excitable, and then he will become greatly depressed. He will be very friendly and anon very hostile. He will be so obstinate that nothing can overcome his determination, and at other times you may lead him like a child. The heretofore ever ready and resolute man manifests marked indecision of character, and in other cases there may be an utter inability to fix the mind on any one subject, or to follow up a train of thought consecutively. Any force to cause permanent intellectual activity must be a mental and not a physical one. If the force be alcohol, which it often is, as it is becoming more and more the habit to resort to it for its temporary effects in this direction, the rate of interest paid for its use is frightful. Not alone is there a loss of tone in character and blunting of moral perception, but intellectual discrimination is much impaired, and impairment of all the mental faculties is almost inevitable. The ideas are more spontaneous, less under the power of control, and any exertion requiring continuous mental effort soon becomes impossible. There can be no doubt that alteration of the brain is taking place *parri passu* with these alterations of character. It may be atrophy, or the circulation through the encephalon may be checked or impeded by ossification or softening of the cerebral arteries, or some disease of the heart itself, or the neurine may be undergoing a change, particularly on its peripheral surface, as well as on the surface of its ventricles or cavities. The convolutions become paler and the furrows shallower. The weight of the whole cerebrum and cerebellum is lighter and less complex. Softening of a very delicate nature, so delicate as only to be detected post-mortem, by letting a little stream of water flow gently over the surface of the brain, may be taking place, or what is very likely, and is often passed by unnoticed, because discernable only to a well-practiced eye, which may not be present at the right moment for observing its attack, is a very slight fit of apoplexy and paralysis, so slight indeed, that it occurs and passes away unnoticed and unperceived, and is recognized only in its after consequences and permanent effects. From such an occurrence, though loss of life does not ensue immediately, yet in its ultimate effects it is sooner or later fatal.

The patient is an altered man and never recovers himself. So delicate is the tracery of the nervous structure, that the damage of a single fibre or set of fibres destroys the unity of the whole. There are generally three things present that lead to these attacks of cerebral hæmorrhage, and as these attacks play a very important part in the production of premature mental decay in inebriates, it is desirable to thoroughly understand them and estimate their importance. The three things alluded to are hypertrophy of the left ventricle of the heart, chronic disease of the kidneys, and finally, degenerated cerebral arteries. The hypertrophy of the heart is a simple hypertrophy of the left ventricle, the wall of the ventricle being thickened without any dilatation, although in exceptional instances dilatation may ensue. The blood in inebriety is more or less noxious to the tissues, since it contains alcohol, and its passage into the capillaries is undoubtedly resisted by contraction of the small arteries, the vessels most rich in muscular tissue. The muscular coat of these vessels, therefore, is hypertrophied in antagonism to the heart. Since the small arteries are hypertrophied throughout the body, the obstructions, though each is slight, are in their sum total so large, that in order that the circulation may be carried on efficiently, hypertrophy of the heart must ensue.

There may be, doubtless, degenerative changes in the small arteries, so that there is increased bulk with altered structure. It should not be assumed, I think, as it often is, that all the processes leading to cerebral hæmorrhage and apoplexy are of a degenerative origin, as there can be no reasonable doubt that the presence of alcohol sets up a condition of sub-inflammatory irritation, which plays a very important part in the production of cerebral hæmorrhage. The sub-inflammatory irritation causes the arteries to lose much of their elasticity and to become permanently wider, longer and more tortuous. This absence of elasticity of the larger arteries becomes, by the withdrawal of the aid to the circulation in equalizing the flow of the blood, an important factor in leading to rupture of the smaller arteries. When the brain wastes slowly, as it often does, the dilatation of the vessels, and the increase in the quantity of the cerebro-spinal fluid, favors rupture very decidedly. There can be no doubt that the occurrence of cerebral hæmorrhage in inebriates, resulting from abnormal strains, would be much more frequent, were it not for the provision which nature has made for the protection of the brain from suddenly increased afflux. The turns of the carotid and vertebral arteries, the free anastomosis of the circle of Willis, and the small size of the arteries beyond that circle, before they enter the brain substance, all tend to protect the brain. The perivascular canals also exercise a protective influence over the vessels they surround, and in the corpus striatum, where cerebral hæmorrhage is especially liable to occur, as its vessels are not capillary in size, and proceed from the middle cerebral artery, which is almost the continuation of the internal carotid, we find the perivascular sheaths of very large size. When I say, then, that I consider one of the principal causes, if not *the* principal cause, of premature decay occurring in inebriates, to be the occurrence of cerebral hæmorrhage, or apoplexy resulting from the degeneration caused by the poisonous effects of alcohol upon the tissues, I do not think I overstate the actual facts. We generally have associated in such cases hypertrophy of the left ventricle of the heart, as I have previously remarked, chronic disease of the kidneys and degenerated arteries. The strong left ventricle and inelastic arteries combine to prevent the wave of blood sent to the arteries from being properly equalized, and consequently the smaller arteries of the brain, which are normally thinner than the arteries of other parts, and which are degenerated, receive the impulse from the heart's action, and being thus diseased and fragile—perhaps dilated and aneurismal—give way.

Before passing to the question of treatment, I desire to briefly notice an interesting question, and one to which very little attention has as yet been directed. The question is that relating to *the degree of moral or criminal responsibility which attaches to inebriates.* Inebriety depends very frequently, as we all know, upon an abnormal organic development of the nervous system that has descended from generation to generation, gaining in intensity all the time. There must certainly be a modified responsibility when homicidal or suicidal acts are committed during periods of such abnormal cerebration. In such cases, a criminal act may be committed in consequence of cerebro-mental disease, without any apparent lesion of the perceptive or reasoning powers. In these cases, also, the mental disorder is of a sudden and transitory character, not preceded by any symptoms calculated to excite suspicion of insanity. It is a transitory mania, a sudden paroxysm, probably epileptiform in nature, in which convulsive activity is not reached except so far as the mind is concerned, without antecedent manifestations, the duration of the morbid state being short, and the cessation sudden. In these cases the criminal acts are generally monstrous, unpremeditated, motiveless, and entirely out of keeping with the previous character and habit of thought of the individual. Such attacks are short in proportion to their violence. There is an instantaneous abeyance of reason and judgment, during which period the person is actuated by mad and ungovernable impulses. I would by no means wish to be understood as advancing the plea that inebriety, as a simple habit, should exempt or protect a man from the consequences of criminal acts committed while under its influence; but if he has unhappily inherited an abnormal organic development of the nervous system, so that mental delusion, weakness or disease deprived him of the power of choice, and if we can say, but for the presence of these morbid conditions, the habit never would have been formed, we should then look upon his inebriety as due to mental disease, and hold him responsible accordingly. In dipsomania we have a true, uncontrollable and intermittent impulse to take alcohol to intoxication, an irresistible impulse, which differs entirely from the physiological state in which an individual merely chooses to indulge in liquor to excess. The first is periodic, the second a daily habit. The first is a *disease*, the latter a *bad habit.* If we in each individual case study up its psychological history, we shall always be enabled to cure.

I knew a very prominent lawyer who, about once in four or five months, would drop his most urgent cases, and remain away from home for days, to gratify the irresistible impulse for drink which periodically seized him, and made him regardless of every consideration of business or family ties. No one deplored this disease more than the patient himself, and no one was more anxious than himself to be cured if such a thing were possible. By my advice, he relinquished his business, put himself under treatment, and at the end of six months returned to his professional duties a well man, and has never suffered from a relapse, as his will power, which had been utterly destroyed, was restored, and he avoided even the most moderate use of alcoholic liquors, and continues to do so to the present day. His dipsomania was the result of a family neurosis, and of hard brain work and consequent brain exhaustion, with too little sleep to renovate his nervous system. I regard this as a case of true periodic mental disorder, just as much as if his disease had been a mania instead of a dipsomania. Dipsomania is not a rare disease in young married women residing amid the excitement of large cities. Nervous exhaustion, produced by sexual excess, and too rapid childbearing, plays, I think, an important *rôle* as the exciting cause of the dipsomania in these cases, which admit of a prompt cure if the patient be removed for a few months from her home, and placed under judicious medical care. If in any given case I can prove to you that an inebriate, who has committed some criminal act during one of his paroxysms, has had a paternal or maternal ancestor in an insane asylum, I certainly present to you a strong reason for pausing before you denounce the act as the simple outgrowth of a vicious habit.

Again, if a man has committed an act prejudicial to himself and others, during a paroxysm of dipsomania which has appeared either in very early youth, or in old age, after a long, virtuous and temperate life, or after a sudden mental shock or sunstroke, I at once negative to your minds the hypothesis of habitual drunkenness.[3]

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[3] The profession should understand that this disease menaces, *necessarily*, not our lowest, but our highest civilization, It is the most brilliant class of men, our great thinkers, men of great mental activity, with whom the anæsthesia attending the use of alcohol blunts and assuages the too acute sensibilities of their nerves. It affords rest to the overtaxed mental faculties, and moderates those excessive sensibilities whose ceaseless activity forces the mind to unresting labor. The men who are threatened with this disease, and become victims to it, *are the neurotic thinkers;* the men who, from the constitutional debility of their inhibitory nervous faculties, *cannot control* the limits of their mental activity. My friend, the late Dr. Joseph Parrish, truly said that "the fact that there is *a condition* of the nervous system with which some men are born, *that predisposes them to seek alcoholic* indulgence, is too well known to admit of successful contradiction." *In an* address before the American *Association* for the Cure of Inebriates, on the "Pathology *of Inebriety,*" I called attention to the fact that it is a disease exhibiting certain essential, psychic and physical signs; a disease in which the victims are all

A very interesting case, from a medico-legal point of view, occurred a short time since, in which the writer was consulted as an expert. A murder was committed by a man under the influence of a small quantity of stimulus, which evidently induced a state of temporary insanity, or an epileptiform attack. The integrity of the brain had been affected by a previous sunstroke, and the man had just recovered from quite a serious illness. It is well known that after a sunstroke, a small quantity of liquor acts very violently upon the central nervous system, and it might, therefore, be argued that he was responsible for the voluntary act by which he submitted himself to the influence of the intoxicating liquors. But the facts of the case were that, previous to this time, he had been accustomed to drink, with impunity, far more than upon this occasion, and had never before been intoxicated. The man was, therefore, in a morbid state produced by the sunstroke, subject thereby to a tendency to insanity, liable to be excited by alcohol, of which morbid state he was ignorant, having had no reason, from his past experience, to believe that such results were likely to proceed from a small quantity of alcohol, and with no intention in his mind to do more than take a very small quantity of stimulus. As you will see, in this case, it seemed the only proper way to hold this man responsible for consequences which an ordinary understanding could recognize as likely to follow from immediate acts. I gave it as my opinion that the murder, which I will presently describe, was committed during a transitory state of *moral epilepsy*, which was the result of a preceding sunstroke, the immediate exciting cause being an attack of illness and the taking of a small quantity of alcoholic stimulus. This state of "moral epilepsy" is a morbid affection of the mind centres, which destroys the healthy coördination of ideas, and occasions a spasmodic or convulsive mental action. The will cannot always restrain, however much it may strive to do so, a morbid idea which has reached a convulsive activity, although there may be all the while a clear consciousness of its morbid nature. The case just alluded to had complained of pains in the head and sleeplessness, which had displayed marked periodicity, and which had been accompanied by great irritability of temper, excited by trifles, and seemingly unconnected with personal antipathies. As has been previously stated, the person alluded to had been suffering from quite a severe illness, and, after taking a small quantity of alcoholic stimulus, went out to walk. He met a friend with whom he had been familiar for years, and a discussion arose as to the respective merits of certain politicians, when, the discussion becoming excited, the man drew a revolver and shot his friend. He then went, in a dazed and confused state, and sat for some hours upon a river dock, and subsequently went home, burst into tears, and informed his wife of the sad occurrence, and gave himself up at the police station. There was no simulation of insanity by pretending to be incoherent or by strange actions, and no attempt, either on the part of himself or wife, to pretend that the act was an insane one. There was, however, a total blank in the prisoner's mind respecting the events immediately preceding the pistol-shot, which shot seemed to have aroused his attention for the time, and he had no recollection of the fact that he sat on the dock for some time afterwards, as he was seen to do. Upon being consulted, as I have stated, I gave it as my opinion that there had existed, for months previous to the occurrence, a profound or affective derangement which, from its marked periodicity, was evidently epileptiform in character, and that the sudden homicidal outburst supplied the interpretation of the previously obscure attacks of sudden derangement. There had evidently been induced by the sunstroke, in this case, an epileptiform neurosis, which had been manifesting itself for months, chiefly by irritability, suspicion, moroseness and perversion of character, with periodic exacerbations of excitement, all foreign to the man previous to the attack of sunstroke. There are a great many instances among dipsomaniacs where, in an unconscious condition, persons progress from odd or eccentric actions to deeds of violence, suicide or murder, being unable to remember the circumstances afterwards, and, therefore, irresponsible for their actions. The question as to the degree of mental responsibility attaching to such cases is one of great interest to psychologists, and also to jurists, and one to which it is hoped, in the future, much more attention may be directed than in the past.[4]

Treatment.—In the treatment of nervous exhaustion and premature mental decay arising as the result of dipsomania, we should primarily direct our attention to the direction of the mental habits. We should endeavor to provide constantly easy and pleasant occupation of the mind, avoiding equally lazy inaction or violent excitement. We have in these cases to deal with a worn, irritable condition of the nervous system—an unstable condition as regards its nutrition, its solidity and its perfection of structure, which makes our task no light matter. We must be very careful that we make our patients sleep, or we shall have a preponderance of waste over repair that will balk all our efforts. Our patients, by reason of the hereditary factor generally present, cannot, without great danger to themselves, do or endure what other

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more or less irresponsible, as are the insane: a disease in which the tone and power of the nerve centres is lost—a disease perhaps more than any other, excepting insanity, requiring for its cure time, and long persistent hygienic influences, to restore the normal vaso-motor condition, affecting the nutrition and circulation of the brain and nerve centers. Normal mental function depends upon cerebral cellular health. Dipsomania is eminently a c [illegible] on cellular and molecular unhealth, and it is this [illegible] f the centric nervous system, demanding stimulan [illegible] the disease. Those who are affected by this disease generally have an inherited neuropathic constitution, and exhibit certain neurasthenic symptoms which are the early, curable, prodromic symptoms of inebriety. They are functional disturbances of the [illegible] ism. There is relaxation of the general muscular tone, [illegible] local *tremor, and* respecting cerebral [illegible] brain due to general failure of [illegible] r of the brain, such as morbid fears and [illegible] ptions, conceptions and misconceptions; [illegible] general irritability—all foreign to a healthy person, and constituting the essential psychic signs of the neuropathic conditions of inebriates.

[4] We are very much behind the age in our medico-legal views of inebriety. Mittermaier, in 1840, in the American Jurist for July, has been found enunciating sound and scientific views respecting the legal responsibility of inebriates. Of course it is perfectly evident to any unprejudiced mind, that any disease in which there is abnormal cerebration, and an abeyance of reason and judgment, where the patient is deprived, by disease, of the power of self-control and choice, produces a limited responsibility. The healthy coördination of ideas is destroyed, exactly as in any other phase of mental disease. The late Dr. Beard and Dr. Crothers have preferred the term "trance state" to the condition I have termed "epileptiform," in which a person may be in apparently full possession of his senses, and yet be as unconscious as if in a somnambulistic state.

In true trance, however, volition is lost, and there is complete abeyance of the mental functions. I explain this condition of abnormal psychical process in inebriates, by which intelligence and thought seem temporarily paralyzed, and consciousness suspended, by the sudden establishment of an irritative lesion caused by vascular tonus of the arterioles of both motor and sensory zones of the cerebral cortex, causing such commotion or perturbation of the centres in general that their functions are for the time partially suspended. We get a paralysis or incoördinate action of these movements, special senses and ideas, the centres of which in the brain the lesion invades. Being only functionally suspended, they again resume their functions, and the normal equilibrium is restored, after a variable period of time. Strychnia, in 1-25 to 1-32 gr. doses, is the best physiological antagonist to this state of vascular tonus of the arterioles of the brain in inebriates.

patients might safely do. It will be also necessary to supply the greatest amount of nutritive material to the brain, to repair the undoubtedly existing nutritive lesion. In some cases I have given protagon with good results, and in others the acid phosphates, with free phosphoric acid, in the form devised by Dr. William Pepper, of Philadelphia. It has seemed to me to supply nerve force and to restore enfeebled digestion very excellently in dipsomania. I have also used a preparation of cod-liver oil with the wheat phosphates with good results. We must quiet all abnormal nervous excitability, and keep our patients calm and tranquil. Attention should be paid to the excretory functions of the skin, kidneys and bowels. If there is headache and drowsiness, such diuretics as the liq. ammon. acet., with spt. æth. nitr., are indicated. The ext. of cannabis indica has also proved itself, in my hands, a valuable adjunct, in doses of $\frac{1}{4}$ gr. of the solid extract. Free exposure, without fatigue, to the fresh air, cannot be too strongly insisted upon. One of the most valuable remedial agents is phosphorus, which I prescribe to be administered in cod-liver oil, in doses of from $\frac{1}{100}$ to $\frac{1}{12}$ gr., after meals. The cod-liver oil is one of the best nutritive remedies, as fat must be applied to the nutrition of the nervous system, if this is to be maintained in its organic integrity. The general effects of phosphorus are those of a stimulant, but it possesses a special power over the exhausted nervous system. It is, perhaps, evanescent in its effects, but is never followed by a stage of depression which is noticeable. It should never be ordered on an empty stomach. I have used the phosphorized elixir of calisaya bark with strychnia in many cases of dipsomania with good results. As I have previously remarked, I regard strychnia as a very valuable nerve tonic in dipsomania, as it seems to me to antagonize the effects of alcohol upon the system. Quinine is also very valuable. I have also obtained excellent results from the use of phosphide of zinc, gr. $\frac{1}{10}$, in combination with the ext. of nux vomica, in $\frac{1}{4}$ gr. doses.[5] When there is persistent insomnia, I am accustomed to rely upon the use of prolonged warm baths, given at bedtime, conjoined, when necessary, with the use of the monobromide of camphor; in doses of 4 grs. I always use the imported preparation (Dr. Clin's capsules). This admirable therapeutic agent is one of the most valuable remedies we possess in treating hysterical mania. It should be given in 4-gr. doses, t. i. d., being careful to order the imported article, which comes from Paris. The chloro-phosphide of arsenic (Routh's formula) is a very valuable therapeutic remedy to antagonize the condition of brain-wasting which often threatens our patient suffering from the nervous prostration induced by dipsomania. It should be given in 5-minim doses, after meals, and gradually decreased till, at the end of six weeks, the patient is taking but 1 minim thrice daily, which he can continue for one week more, and then drop entirely. I come finally to speak of the remedial agent which, in my opinion, far surpasses all others in its permanent effects, and which is comparatively little used. I refer to the judicious use of the constant and induced currents of electricity. The essential difference in the action exerted upon the nervous system by the use of electricity and that produced by drugs very often prescribed, is as follows: Many of the remedies commonly employed in the treatment of nervous diseases and in dipsomania, for the purpose of restoring lost nerve force. are *nerve stimulants,* and not nerve tonics in the proper sense of the term.

Electricity is a remedial agent which furnishes us with the means of modifying the nutritive condition of parts deeply situated, and of modifying the circulation to a greater extent, I think, than by any known agent. By the judicious employment of the constant and induced currents, we have it in our power to hasten the process of nerve growth and nerve repair, and thereby indirectly hasten the acquisition of nerve power. The use of electricity does not, I think, act by contributing anything directly to the growth or repair of nerve tissue. Its action, it would seem most probable, is to stimulate and quicken those processes on which the material and functional integrity of the nervous system depends. The action of electricity is always followed, in my practice, by an increase of strength and nerve force, and the results gained are gradual and permanent; while the use of nerve stimulants has always seemed to me to primarily excite the nerve activities proper, and *not* the nutritive processes upon which the acquisition of power depends. The deceptive results obtained from the use of nerve stimulants, depend upon the excitation of nerve activities and the resultant expenditure of nerve power, which is followed by a period of exhaustion, varying in degree and duration.

128 Park Place, near Prospect Park, February 8, 1892.

APPENDICITIS.

Read before the Kings County Medical Association, January 12, 1892.

BY W. H. BIGGAM, M.D.,

OF BROOKLYN, N. Y.

So many different terms have been applied to the pathological condition, known and described by more modern writers as appendicitis, that one is apt to have a rather confused idea of the subject.

My remarks will be confined to a brief description of the pathology, diagnosis and treatment of inflammation of the vermiform appendix, and the tissues surrounding and adjacent to that organ under the comprehensive term of appendicitis, which, it seems to me, as fully and accurately expresses the origin of the lesion, and the pathological condition, as does the term salpingitis in referring to inflammation of the Fallopion tubes, but where, as a result of the original lesion, you might have peritonitis, cellutitis, and ovaritis.

So, in appendicitis, you might have following the original lesion, typhlitis or inflammation of the walls of the cæcum; peri-typhlitis, or inflammation of the peritoneum covering the cæcum, or para-typhlitis, inflammation of the peritoneum *behind* the cæcum, all of which almost invariably have their origin in the appendix; and that ulceration and perforation of that organ has been the cause of perityphlitic or circumcæcal abscesses, has been proved by the result of autopsies in the majority of cases.

The late Dr. Henry B. Sands, almost to the time of his death, maintained that where there was a circumscribed collection of pus, the inflammation and suppuration were outside of the peritoneum, and that operation should be deferred ten or twelve days until the abscess had reached a situation where it could be opened by a simple incision without invading the peritoneal cavity. In the *New York Medical Journal* of February, 1888, he published an elaborate article maintaining his position.

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[5] Oxide of zinc in 2 gr. doses ter die in alcoholic insanity is extremely valuable, inducing healthy molecular action in the brain.

The question as to whether abscesses were intra or extra-peritoneal, was much debated, but there is now no reason for disagreement on this point. Bull and others have demonstrated that the cæcum and appendix are always invested by peritoneum, and to his painstaking labor, with that of Lange, McBurney, Weir, Stimson and Hartley are we indebted for the correction of this erroneous idea.

The cause of appendicitis is commonly supposed to be due to the presence of foreign bodies: fæcal concretions, grape seeds, etc.; but many operations for disease of the appendix have been performed where no foreign body has been found. I can recall two cases that have occurred in my own practice, where no cause could be assigned, except great physical exertion in a cold rain.

If exposure can produce idiopathic peritonitis, why not appendicitis. This would seem a logical sequence in those cases where a catarrhal condition of the cæcum was already present.

A catarrhal inflammation of the mucous lining of the cæcum extending to the appendix, and due to the exceedingly common American malady, constipation, is ascribed by Lange, Gerster and the German school, particularly, to be more frequently the cause of appendicitis, than all others combined.

The diagnosis of this disease is usually not difficult if seen at the beginning, but if the inflammation has extended, and the belly has become tympanitic, it often is exceedingly so. Temperature range is not always to be relied upon; you may have a general septic peritonitis with a subnormal temperature. McBurney says that it is absurd to depend upon the temperature range in these cases, as in any way indicative of the severity of the disease.

Too much importance has been attached to the so-called McBurney point.

Dr. VanderVeer, in a discussion before the State Medical Society at Albany, last year, said there existed no longer any excuse for a physician in full practice who pleaded ignorance of the McBurney point.

The McBurney point, a name given by Dr. Lewis A. Stimson, is, as you all know, a point of greatest tenderness, supposed to be situated two inches to the left of the right anterior superior spinous process, on a line drawn from that point to the umbilicus.

You may find the point of tenderness above, below, to the right or the left of this; as I discovered in a case to which I was called November 18.

In this case the so-called McBurney point was *above* the anterior superior spinous process at the lower margin of the ribs, and as there is another point that I wish to bring out in connection with this case, I will here give a brief history of it:

The patient, G. B., aged 38, was taken sick on the night of November 17 with chills, vomiting and excruciating pains in right iliac region paroxysmal in character.

I saw him on the morning of the 18th and found him lying on his back with the right thigh flexed on the pelvis. His pulse was 88; temperature 100.5. Complained of great pain in right side, which was very tender on pressure; point of greatest tenderness being where I above mentioned. There was slight tumefaction. His temperature steadily rose until on the evening of the 19th it reached 101.4. The pain and tenderness meanwhile increasing. On the morning of the 20th his temperature had suddenly descended to 98.3, where it remained. The pain had gone and the tenderness and tumefaction as rapidly subsided.

I am unable to account for the speedy amelioration of all the symptoms in this case, except that there was a collection of pus in the appendix which found its way into the bowel and so passed off.

Beginning typhoid fever has been taken for appendicitis, likewise an impaction of fæces; a case of which I saw in consultation in the country during the latter part of August last. The patient had been confined to bed five days, with warm poultices to the abdomen, and had been given small doses of opium at regular intervals to relieve the pain.

An ounce of sulphate of magnesia, followed by copious irrigation of the lower bowel, relieved the impaction and cured the appendicitis. But, as the attending physician afterward wrote me, the passage he had astonished the neighborhood.

Exploratory punctures as a means of diagnosis ought *never* to be resorted to. They increase the danger of septic infection, and if the abscess is circumscribed and deeply seated, it is very likely to escape detection.

Of course, if, after exploratory puncture, pus is detected, operation need no longer be deferred; but failure to detect pus ought not to deter one from operating if other good and sufficient reasons present themselves.

This recalls a case in point which I saw in consultation three years ago. The patient was an old lady of 60, who had been having symptoms of appendicitis for ten days. There was a mildly septic condition with some prostration, but no peritonitis. I thought I detected deep fluctuation, and advised operation; but the third physician who was called in consultation advised against it, because after several exploratory punctures he failed to detect pus. I had the pleasure of making an autopsy at the end of a week, and found an extra-peritoneal abscess, that might easily have been reached without invading the peritoneal cavity.

The question of *when* to operate is the most difficult to solve, that presents itself in connection with the disease. Weir forms his opinion as to the necessity of operating by the reaction of the patient to small doses of morphine; that in the majority of cases operation is indicated if large doses of morphine are required to relieve the pain.

McBurney says it is not difficult to determine the existence of the disease, but what is to be the future progress of it *is* very much so, and he is guided, not so much by the number of days or hours the disease has run, but by the character and extent of the inflammation. He favors early operation, not later than the third day, if possible, and on this point at the present time there seems to be a consensus of opinion.

The symptoms of appendicitis at the onset are, in the majority of cases, quite regular. Usually ushered in with a succession of slight chills, followed by elevation of temperature, varying from 99° to 102°.

The bowels may be regular, but there is usually constipation, with an antecedent history of the same. Vomiting frequently precedes the attack. The physician is called in to relieve the pain, which is a constant accompaniment of beginning appendicitis, and is referred to the lower abdominal region in general, but is greater on the right side. There is tenderness on pressure, generally tumefaction; pulse weak and irritable, running from 100 to 120. Countenance has a characteristic expression of pain, and the patient usually lies on his back with the right leg flexed.

On the affected side there will be a rigidity of the abdominal muscles. This symptom McBurney regards as constant and of much value.

The medicinal treatment of appendicitis can be dismissed in a few words, but before doing so I feel that I cannot too strongly deprecate the giving of opiates in sufficient quantities to quiet the pain. It lulls both the physician and patient into a sense of false security, and ends by putting the patient *eternally* to rest. Such an incident happened to myself not very many years ago, but when I knew less of the disease.

As I then supposed, the first indication to be fulfilled was to relieve the pain, which I accordingly did with full doses of morphia hypodermatically. The case ended in speedy death on the second day, with all the symptoms of rapid fulminant septic peritonitis. Since then I have become convinced that cases which require heroic doses of morphia to relieve the pain require, instead, surgical interference.

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Thomas W. Poole, M.D., read a paper entitled

SOME SUGGESTIONS AS TO THE MODE OF ACTION OF THE GALVANIC CURRENT IN GYNECOLOGICAL PRACTICE.

The idea generally entertained regarding the use of electricity for medical purposes, is rather of a complex character, combining a blending of stimulative alterative and sedative effects. If this be true it is worth investigating.

Apart from its caustic and electrolytic effects, it is generally believed to exert a trophic or dynamic influence over the tissues through which it passes; but these are too subtile, if they exist, to admit of being traced, at present, with any hope of success. I shall therefore confine myself to consideration as to how the more noticeable vascular effects are produced by the galvanic current.

These are sometimes well seen in the employment of a current of from 50 to 100 milliampères, in cases of chronic inflammatory conditions of the uterus and its appendages, in which pains, tenderness and tumefaction may be readily increased to a notable extent, causing an aggravation of all the symptoms. Even in the absence of any pelvic disease, where the galvanic current is applied to the spine in the treatment of affections of that organ it is not uncommon to find the menses are hastened.

In view of these facts, it must be admitted that the galvanic current, in so far at least as its effects on the female pelvic viscera are concerned, appears to be an excitant, and in some way produces increased hyperæmia and other effects, which at first sight suggest a resemblance to the increased vascularity of the first stage of the inflammatory process;—a resemblance more apparent than real.

How does the galvanic current produce the apparent excitation of vascular action? And again, how does this phase of its character accord with its well earned reputation as a soother of pain and a sedative to excited nerve action?

In view of the well known mechanism by means of vaso-motor centres in the medulla oblongata, spinal cord and elsewhere, for regulating the calibre of the arteries and with this the outflow of blood from them into the veins, the question may be asked, does this general mechanism apply also to the pelvic viscera, or are there special modifications of that mechanism for the control of blood supply to the generative organs in the male and female? This inquiry becomes important, if the uterus and its appendages are to be regarded as erectile organs (Kuss. Phys., p. 492), and if electrization of the genital centre in the lumbar spinal cord or of certain nerves leading from it, produces dilatation of the pelvic arteries, as Dr. Brunton asserts. (Pharmacol., p. 386.)

Such a mode of action would certainly afford a simple and easy explanation of the increased vascularity under consideration: but it would be an irregular and exceptional mode of action, at variance with what occurs in the system generally, in which, under the influence of the electric current we are taught the vaso-motor centres are excited and the arteries correspondingly made to contract.

If we admit the control by these rival claimants, general and local, of pelvic blood supply, we shall have the anomaly of our galvanic current (one pole being in the arteries and the other on the spine), dilating the uterine arteries through the influence of the spinal genital centre, and at the same time the vaso-motor centres in the spine and sympathetic ganglia contracting the same arteries, as they do elsewhere in the body.

Probably there is no danger of such a complication arising, for it is elsewhere stated that Budge, the discoverer of the genito-spinal ganglion referred to, found that when this portion of the spine was faradized there arose energetic contractions of the muscular tissues in the pelvis. Now it is well known that the faradic current, by the rapid vibrations it occasions, determines an increased supply of blood to the part; and this may be the explanation of the observation in question.

Such, no doubt, is the mode of action of the faradic current in cases of uterine relaxation and anæmia, under which the weak or relaxed fibres are exercised and strengthened, the languid circulation quickened, and local nutrition improved; but this does not apply to the employment of the galvanic current in the class of cases under consideration.

Another observation of physiological experimentation must not be lost sight of. It is asserted that "when a sensory nerve is irritated (faradized) the action of the vaso-motor is suspended in the part supplied by the nerve, and in those which immediately adjoin it, so that their vessels become dilated, while at the same time contraction of the opened by a simple incision without invading the peritoneal cavity. In the *New York Medical Journal* of February, 1888, he published an elaborate article maintaining his position.

The question as to whether abscesses were intra or extra-peritoneal, was much debated, but there is now no reason for disagreement on this point. Bull and others have demonstrated that the cæcum and appendix are always invested by peritoneum, and to his painstaking labor, with that of Lange, McBurney, Weir, Stimson and Hartley are we indebted for the correction of this erroneous idea.

The cause of appendicitis is commonly supposed to be due to the presence of foreign bodies: fæcal concretions, grape seeds, etc.; but many operations for disease of the appendix have been performed where no foreign body has been found. I can recall two cases that have occurred in my own practice, where no cause could be assigned, except great physical exertion in a cold rain.

If exposure can produce idiopathic peritonitis, why not appendicitis. This would seem a logical sequence in those cases where a catarrhal condition of the cæcum was already present.

A catarrhal inflammation of the mucous lining of the cæcum extending to the appendix, and due to the exceedingly common American malady, constipation, is ascribed by Lange, Gerster and the German school, particularly, to be more frequently the cause of appendicitis, than all others combined.

The diagnosis of this disease is usually not difficult if seen at the beginning, but if the inflammation has extended, and the belly has become tympanitic, it often is exceedingly so. Temperature range is not always to be relied upon; you may have a general septic peritonitis with a subnormal temperature. McBurney says that it is absurd to depend upon the temperature range in these cases, as in any way indicative of the severity of the disease.

Too much importance has been attached to the so-called McBurney point.

Dr. VanderVeer, in a discussion before the State Medical Society at Albany, last year, said there existed no longer any excuse for a physician in full practice who pleaded ignorance of the McBurney point.

The McBurney point, a name given by Dr. Lewis A. Stimson, is, as you all know, a point of greatest tenderness, supposed to be situated two inches to the left of the right anterior superior spinous process, on a line drawn from that point to the umbilicus.

You may find the point of tenderness above, below, to the right or the left of this; as I discovered in a case to which I was called November 18.

In this case the so-called McBurney point was *above* the anterior superior spinous process at the lower margin of the ribs, and as there is another point that I wish to bring out in connection with this case, I will here give a brief history of it:

The patient, G. B., aged 38, was taken sick on the night of November 17 with chills, vomiting and excruciating pains in right iliac region paroxysmal in character.

I saw him on the morning of the 18th and found him lying on his back with the right thigh flexed on the pelvis. His pulse was 88; temperature 100.5. Complained of great pain in right side, which was very tender on pressure; point of greatest tenderness being where I above mentioned. There was slight tumefaction. His temperature steadily rose until on the evening of the 19th it reached 101.4. The pain and tenderness meanwhile increasing. On the morning of the 20th his temperature had suddenly descended to 98.3, where it remained. The pain had gone and the tenderness and tumefaction as rapidly subsided.

I am unable to account for the speedy amelioration of all the symptoms in this case, except that there was a collection of pus in the appendix which found its way into the bowel and so passed off.

Beginning typhoid fever has been taken for appendicitis, likewise an impaction of fæces; a case of which I saw in consultation in the country during the latter part of August last. The patient had been confined to bed five days, with warm poultices to the abdomen, and had been given small doses of opium at regular intervals to relieve the pain.

An ounce of sulphate of magnesia, followed by copious irrigation of the lower bowel, relieved the impaction and cured the appendicitis. But, as the attending physician afterward wrote me, the passage he had astonished the neighborhood.

Exploratory punctures as a means of diagnosis ought *never* to be resorted to. They increase the danger of septic infection, and if the abscess is circumscribed and deeply seated, it is very likely to escape detection.

Of course, if, after exploratory puncture, pus is detected, operation need no longer be deferred; but failure to detect pus ought not to deter one from operating if other good and sufficient reasons present themselves.

This recalls a case in point which I saw in consultation three years ago. The patient was an old lady of 60, who had been having symptoms of appendicitis for ten days. There was a mildly septic condition with some prostration, but no peritonitis. I thought I detected deep fluctuation, and advised operation; but the third physician who was called in consultation advised against it, because after several exploratory punctures he failed to detect pus. I had the pleasure of making an autopsy at the end of a week, and found an extra-peritoneal abscess, that might easily have been reached without invading the peritoneal cavity.

The question of *when* to operate is the most difficult to solve, that presents itself in connection with the disease. Weir forms his opinion as to the necessity of operating by the reaction of the patient to small doses of morphine; that in the majority of cases operation is indicated if large doses of morphine are required to relieve the pain.

McBurney says it is not difficult to determine the existence of the disease, but what is to be the future progress of it *is* very much so, and he is guided, not so much by the number of days or hours the disease has run, but by the character and extent of the inflammation. He favors early operation, not later than the third day, if possible, and on this point at the present time there seems to be a consensus of opinion.

The symptoms of appendicitis at the onset are, in the majority of cases, quite regular. Usually ushered in with a succession of slight chills, followed by elevation of temperature, varying from 99° to 102°.

The bowels may be regular, but there is usually constipation, with an antecedent history of the same. Vomiting frequently precedes the attack. The physician is called in to relieve the pain, which is a constant accompaniment of beginning appendicitis, and is referred to the lower abdominal region in general, but is greater on the right side. There is tenderness on pressure, generally tumefaction; pulse weak and irritable, running from 100 to 120. Countenance has a characteristic expression of pain, and the patient usually lies on his back with the right leg flexed.

On the affected side there will be a rigidity of the abdominal muscles. This symptom McBurney regards as constant and of much value.

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In pursuing this subject further, with a view, if possible, to a more definite elucidation of the action of the galvanic current, I propose to refer to some peculiarities in the relation of this current to involuntary muscles, which appear to have been overlooked by physiologists.

In its relation to the involuntary muscles, including the muscular bands of the arterioles, the electric current applied directly or reflexly to the motor centres and nerves of these muscles, produce effects similar to section of these nerves, or to destruction of their nerve centres.

As regards the arterial muscular bands, in which we are here more especially interested, it will be necessary to summarize the evidence. In doing this I shall quote freely from Dr. Burdon Sanderson's Hand-Book for the Physiological Laboratory, Lindsay & Blackiston, 1873.

What is taught in the text-books is, that when the influence of the chief vaso-motor centre in the medulla is cut off from the vascular system, by destruction of the medulla itself, or by section of the spinal cord, or when the same thing is accomplished locally by section of a vaso-motor nerve trunk, the arteries are paralyzed, relaxed, and permanently dilated. (Hand-Book, 245, 246, etc.)

The student of physiology has just reason to complain of the manner in which facts are half stated. For instance, in a number of sections in this Hand-Book, purporting to furnish scientific proof that the arteries are really relaxed, the condition of the arteries is never alluded to, and we are vaguely informed that "the vessels" are relaxed, without specifying whether these vessels are arteries or veins.

A careful study of the several sections referred to will show that what really occurs, on the destruction of the medulla, or section of the cord, is quite similar to what occurs from defect of oxygen in the blood in the last stage of asphyxia, namely, general contraction of the arteries and the emptying of their contents into the veins.

And now to the proof, which must be condensed and as brief as possible. When a frog is pithed, we are informed (in sections 47 and 85) that the sinus venosus, auricle, and heart, though still beating, are empty. We are not told that the arteries are empty also; but this appears incidentally in the fact that "the intestinal veins are distended," and that "the blood has come to rest in the more capacious venous system out of reach of the influence of the heart" (p. 246). The emptiness of the arteries is further proved by comparison with an unpithed frog, whose nerve centres are still intact. In both frogs the bulb of the aorta is laid open, the frogs being hung vertically on a board side by side. "In the frog deprived of its nerve centres only a few drops of blood escape" from the open aorta, while in the case of the other frog "the bleeding is not only more abundant, but continues for several minutes" (p. 296). Thus the evidence shows that in the pithed frog the arteries, so far from being paralyzed and relaxed, have undergone active contraction, and have emptied their contained blood into the veins, leaving their own tubes empty and the veins greatly distended; while in the other frog, whose nervous centres are uninjured, the arteries contain their usual supply of blood, which drains away through the aortic opening.

The same result occurs when the spinal cord is cut below the medulla. Such forcing forward of the blood from the capacious terminal intestinal veins does not imply that these vessels are under the control of the vaso-motor nerves. Such is not the case. Physiologists invariably limit the distribution of these nerves to the arteries and probably to the capillaries. (Hand-Book, p. 256; Foster's Phys., pp. 263, 265; Brunton's Pharm., p. 254.) Ziegler says "the veins are normally devoid of tomes. The resistance offered to the venous blood current is chiefly due to gravitation, and is chiefly overcome by the action of the muscles." (Path. Anat., p. 45.) The splanchnic nerve trunks contain motor as well as vaso-motor nerve fibres, and it is the action of the faradic current on the former, setting up a rapid series of contractions in the muscles of the intestines and other viscera that the forcing forward of blood from the distended veins of these viscera is due, and not to vaso-motor nerve influence, which, as already stated, has no control over the calibre of the veins, thus the experiment completely fails to prove that the arteries are relaxed and dilated. What it does prove, as in the former experiment, is that the arteries are empty and contracted and the venous system dilated.

Section of the splanchnics affords a striking illustration of the error of the text-books. These nerves contain the vaso-motor trunks for regulating the blood supply of the abdominal viscera. When they are cut, Dr. Burdon Sanderson says, "the vessels of all the abdominal viscera are seen to be dilated. The portal system is filled with blood; the small vessels of the mesentery and those which ramify on the intestines are beautifully injected; the vessels of the kidney are dilated, and the parenchyma is hyperæmic; all of which facts indicate not merely that by the relaxation of the abdominal blood vessels a large portion of the resistance to the heart is annulled, but that a quantity of blood is, so to speak, transferred into the portal system, and thereby as completely discharged from the systemic circulation as if a great internal hæmorrhage had taken place" (p. 260).

It is plain, that here, as in the former cases, the distended "vessels" are the veins and not the arteries; and that there is no proof whatever that the arteries are paralyzed and dilated. Had such been their condition, they could not have "transferred" the blood from the systemic circulation to the portal veins in the manner described. This is not the work of paralyzed and flaccid tubes.

More than this, as already stated above, the veins have *no* vaso-motor nerves, and their calibre is not, as in the case of the arteries, regulated by nerve influence. (Foster's Phys., p. 263, 265.) All physiologists I believe agree in this. The section of the nerve trunk could not therefore be the immediate cause of the venous enlargement. Considering their passive character, this distension of the veins can only be accounted for by the presence of blood forced into them by the contraction of the arteries.

The classical experiment of Bernard and Brown-Séquard on the cervical sympathetic admits of a similar interpretation. In his original account of it, Dr. Brown-Séquard does not once say that the arteries are dilated. With the usual lack of precision, it is always the blood "vessels" which he found dilated. The effects, he says, are similar to those caused by suspending an animal with the head downward. (Sect. Cent. New Syth., p. 143.) All the facts, including the absence of active inflammatory results (Ch. Sect., p. 90), are consistent with venous hyperæmia.

Again, the results of the destruction of the vaso-motor nerve centre in the medulla as in pithing, is precisely what occurs in the dying and is complete in death from any cause, namely: the well-known arterial symptoms and venous fullness.

Is not the defect of oxygen in the blood, in asphyxia, which also "causes general contraction of the arteries, the immediate consequence of which is to fill the venous system" (Hand-book, p. 333), to be held to be paralyzing in its action also? We are told by Dr. Brunton that "the function of nerves depends very greatly upon the quality of the blood supplied to them." (Phar., p. 357.) Dr. M. Foster has stated that in the case of the muscle "bad blood is more injurious than no blood at all" (Phys., p. 126). And we have the "physiological law" of Dr. C. B. Radcliffe, that the "activity of an organ is directly dependent upon its receiving a due supply of oxygenated blood." If it were not for the exigency of the theory of the text books which requires a stimulant to the nerve centres in asphyxia, is it likely that physiologists would have sought for one in so promising a pabulum, as impure venous blood, loaded with carbonic acid, and greatly deficient in oxygen? Having no respect for the theory of the text books in this particular, I venture to claim for the effect witnessed in emptying the arteries and filling the veins, in this case, another example of vaso-motor paralysis and corresponding arterial contraction.

Now the point of all this centres in the fact, that faradization of the medulla, and its chief vaso-motor centre, faradization of the distal end of the cut cord, and faradization of vaso-motor nerves, as in the case of the splanchnics, also causes arterial contraction, general or local, as the case may be. (Hand-book pp. 247, 251, 256, 493.) The same result of arterial contraction follows when the vaso-motor nerve centres are acted on, indirectly, by faradization of a sensory nerve. (Hand-book, p. 254, Brunton's Phar., p. 255.) It is of course in this way that the galvanic current produces its vascular effects in gynecological produce.

To sum up: We have seen that arrest of function of the chief vaso-motor nerve centre by pithing, by section of the cord below the medulla, by section of leading vaso-motor nerve trunks, by paralysis from defect of oxygen in the blood, and in death of the body, produces the uniform effect of contraction of the arteries, and that similar arterial contraction attends the employment of the electric current, directly or reflexly.

If the former series of acts of nerve destruction and nerve section and the causation of death in asphyxia, are to be regarded as paralyzing acts, which surely no one will deny, must we not regard the action of the electric current as also of a paralyzing character?

Having thus arrived at the conclusion that the electric current is a paralyzing agent to the motor nerves of involuntary muscles, and in virtue of its character, as such, produces contraction of the arteries, let us see how this accords with the general effects of this agent in clinical cases.

It certainly accords well with its effect in relieving pain than which Dr. Bartholow has said, nothing in therapeutics is more certain. (Mat. Med., p. 62.) This view of its mode of action justifies the use in our older works on electrical treatment, of such phrases as "the paralyzing effect of the galvanic current" (Meyer's p. 62), "the benumbing effects of faradization;" "one of the most potent of sedatives." (Beard & Rockwell, p. 263, 379, 705.) It also explains the well known electrical anæsthesia during certain minor surgical operations.

It has been claimed that the effect of galvanization in the relief of pain is often due to the improvement of nutrition, and this is doubtless true, but this is a process which requires time, and the relief of pain is sometimes too prompt and immediate to admit of this explanation; and here the "benumbing" character of the action comes into play.

It is easy to show how, in accordance with this very character as a paralyzer, the galvanic current may bring about a quickening of the circulation, with the consequent improved nutrition, absorption of exudations and other beneficial results; thus "from seeming evil still educing good."

We have seen above how frequently arterial contraction, with increased blood pressure, results in forcing the blood from the arteries into the capillaries and veins. The extreme effect seen in the examples cited is not sought, or induced, in clinical cases. What here results, is doubtless a moderate degree of arterial contraction, serving to "tighten" the arterial coats, and as a consequence quickening the blood stream, and thus promoting the desired effects of improved nutrition, etc. That less propelling force is necessary in a tense tube than in a relaxed one, was long ago shown by Dr. C. J. B. Williams, quoted by Dr. W. B. Carpenter, to prove the benefits produced by increased arterial tension in accelerating the movement of the blood. (H. Phys., p. 485). We have also other examples which sustain this view. Thus, Dr. Bartholow quotes Spitzka for the observation that the vaso-motor effect of strychnia "is to increase the blood pressure and the rapidity of the blood current by contracting the arterioles." Some therapeutists have attributed similar effects to ergot, and Dr. Bartholow himself finds among the results of atropine (which undoubtedly contracts the arterioles), "an increased supply of blood to the periphery" (Mat. Med., pp. 436, 452, 480).

Let me say in passing, that the effects just attributed to strychnia, namely, contraction of the arterioles, are what might be expected from a drug which "prevents the oxidation of the blood" (Harley); which "directly depresses the motor nerves" (Ringer, Therap., 5th bd., p. 499); and which "destroys nervous excitability from the centre to the periphery" (Dr. W. A. Hammond, Dis. New Syst., p. 539). Strychnia further retards the power of the spinal cord to transmit impressions; it diminishes or abolishes the power of tummation in the cord (Brunton, Pharm., pp. 150, 166), and in all this, proves itself a paralyzer of nerve function, and like other paralyzers, produces arterial contraction, as mentioned above.

From all this, I think we are justified in attributing to electricity, in gynecological practice, the mode of action just described. A moderate effect, quickening the blood stream, accounts for the beneficial effects already enumerated; while an excessive outflow of blood into the veins, especially in the previously congestive and inflammatory cases first mentioned, causes increased pain, tumefaction, and an aggravation of all the symptoms. These, I think, venous hyperæmia is sufficient to account for, seeing the effects are temporary and usually soon subside, unless in aggravated cases.

Further, I respectfully submit, that the effects produced by the electric current upon protoplasm, upon the blood corpuscles, upon the heart of frogs in *arresting its pulsations*, upon the muscles in inducing the earlier onset of rigor mortis, are all what might be expected from an agent inimical to nervous activity.

I think it is not too much to claim that, had the paralyzing character of electricity over the motor nerves of involuntary muscles been recognized at the time it was seen to stop the frog's heart, the explanation of that result would have been simple and easy. In order that electricity might arrest the heart as a stimulus, it became necessary to assume the existence of a huge and complicated inhibitory system of ganglia and nerves, which are purely imaginary, and wholly unnecessary to an explanation of the phenomena to which they have been applied, and which might be entirely dispensed with to the great advantage of physiological and therapeutic enquiry.

It will be obvious that, if the mode of action of electricity be such as is here portrayed, the use of the terms "excitation," "irritation" and "stimulation," employed in our text-books as synonyms for faradization and galvanization, are manifestly improper, and should be avoided.

As I cannot expect so revolutionary a paper as this to pass without criticism, and perhaps censure, you will permit me to anticipate probable objection. It may be asked, how even an involuntary muscle can contract without the time-honored "stimulus" from the nerve? The answer is easy. Ever since Haller's time, the independent activity of muscle has been a mooted point. It is now known that the contractile force of muscle is developed in the oxidative process taking place in itself—in short, that the muscle manufactures its own contractile energy, subject to certain nervous conditions (Rosenthal, Muscles and Nerves). It is the failure of this process which causes the relaxation of the muscles in syncope, in extreme alcoholic inebriation, in chloroform narcosis, and other similar states; and also as seen in death before the setting in of rigor mortis.

If you ask why voluntary muscles do not contract also, when their motor nerves are cut, I must confess my inability to answer in a satisfactory manner. There are many things yet to be learned in reference to the mysterious arena where nerve and muscle join their forces. It might be supposed, however, that the motor endings and nerve plates in the muscles may serve in some way to maintain for a time the existing state, after withdrawal of central nerve influence.

Let me add, in conclusion, that if you will give the doctrine here presented a candid consideration, you will find that it accords well with a variety of physiological and pathological conditions, but it would be improper for me to delay you in attempting to discuss them here. I will only say, that it will throw light on what Dr. Francis Anstie said of the vomiting of migraine— that it "marks the lowest stage of nervous depression," the nerve suffering loss of energy, not the gastric muscle, which is active enough. It will show why in strychnia nerve paralysis, the muscles respond to a much weaker current of electricity than in health—in fact, to anything which causes the least nerve perturbation, sometimes even a breath of air; because nervous restraint over the muscle is at so low an ebb that very little suffices to annul it, and to set the muscle free to exert its free and independent contractile power. It will do away with the incubus of inhibition by substituting for it a rational paralysis, under conditions where lessened nerve activity may reasonably and properly be expected.

Gentlemen, I have kept you too long in dealing with a somewhat abstruse subject. I have only now to thank you for the patience with which you have listened to me, and await your verdict. Let me, finally, express the hope, that in some of the well-equipped laboratories of this country, the experiments referred to above will be repeated, under conditions to secure greater certitude and exactness of detail than seems to have been achieved by the eminent physiologists of the Old World.

Dr. Morton: I do not think it right to let a conscientious and carefully prepared paper go by without a word; but I think it is rather a question to be thought out by the physiologist rather than by the doctor. If all the physiologists are wrong, I should invite them here to fight. It is a reversion of our views as to the circulation. I see that the vessels to which the physiologists refer are the capillaries rather than the veins. I do not feel able to fight the physiologist, but I compliment the doctor in the way he handles the facts. I find fault when he says that the faradic current is the sedative, for if I had the toothache I think I should prefer some other current; and although it is somewhat sedative, the others are very much more so. What the doctor quotes of the modern view as regards the muscles is interesting; that it contracts in a variety of substances in the interstices of the muscles, and that finally the very slightest nerve influence may upset the equilibrium of the inter-muscular substance is very interesting. So that when the muscles contract it practically amounts to this, rather than destroying its own substance you excite a destruction of the substance which is stored up there. Practically then, as far as I see or understand the paper, it is that we have been calling exciting effects of the induced current what we should call the paralyzing effects, and I think that is the salient feature which I arose to emphasize, and which I think a most interesting point, and I shall try to think of it again and again as I am using the current and see if anything can be made of it. Sometimes the physiologist and physicist are not right, and the doctors have set them thinking on the right track.

Dr. Walling: I believe, too, that the faradic current has a paralyzing effect. When you approach a nerve, for instance, in facial neuralgia, as in tic, which is very painful, by throwing rapid vibrations on the nerve you so paralyze it that it cannot convey the painful impression, and it gives it time to readjust its disturbed molecules and take on a healthy condition. I have seen that often, and I have come to believe it of a paralyzing nature which you might carry too far.

Dr. Henry McClure, of Norfolk, England, read a paper entitled

ELECTRICAL CONTACT FORCE.

The subject I have chosen for my short paper is contact force at the junction of dissimilar metals or other substances. A definite view of what is going on at such a junction would clear the way to a better understanding of the complex phenomena of electricity.

At the junction begins the work, whether we take dissimilar metals immersed in a fluid, in air, or dissimilar substances or dialectrics brought together. I wish to treat the subject by the light of modern views of electricity with the hope of clearing away some obscurities.

First, it would be well to consider two dissimilar metals—zinc and copper—immersed in a fluid acidulated water; such water contains atoms of oxygen and hydrogen free or potentially free; that is, actually dissociated, or so frequently interchanging at random from molecule to molecule that the direction of their motion may be guided by feeble directive force. Each of these atoms, in a free state, possesses a charge of electricity, the hydrogen a certain amount of positive electricity, the oxygen twice that amount of negative. Zinc and copper both attract oxygen, but zinc more than copper.

The free oxygen atoms begin moving up to the zinc, the free hydrogen atoms to the other plate. It is not necessary to assume that the plates are attracting all the atoms in the liquid far and near. All that is necessary to assume is a force acting on the atoms in the immediate neighborhood of the plates. The zinc plate removes and combines with all the oxygen atoms within its range, but these will be replaced by others by diffusion, these again by more distant ones, and so on. So we have a procession of oxygen atoms all through the liquid towards the zinc. All the atoms which reach the zinc neutralize a certain portion of its electricity by means of the charge they carry, and would so neutralize its attractive power on the charged oxygen atoms and everything would stop; but if the metals are connected by means of a wire, a channel for the escape of its electricity is provided, the circuit is completed, the electricity streams back by the wire, and the procession goes steadily on.

The electricity thus imparted to the copper neutralizes any repulsion it exerted on the charged hydrogen atoms; and makes them in a similar way begin a procession towards it, deliver up their charges to it, combine with each other, and escape as a gas.

Helmholtz avoids the necessity for postulating any chemical (non-electrical) force between zinc and copper by imagining that all substances have a specific attraction for electricity itself, and that zinc exceeds copper and other common metals in this respect. He would thus think of zinc attracting the oxygen itself, by its electric charge, and so would liken a battery cell still more completely to a voltameter; the polarization at the hydrogen evolving plate he would account for by the attraction of hydrogen for negative electricity, and the consequent repugnance of the hydrogen atoms to part with their charge.

It is almost certain that the hydrogen and oxygen in a water molecule cling together by reason of the attraction between their opposite charges. The atoms in an electrolyte might be likened to charged pith balls driven along by their electric charges.

We must not lose sight of the fact of the two opposite processions. There can be no procession of positive atoms through the liquid without a procession of negative ones. An electric current in a liquid necessarily consists of a flow of positive electricity in one direction, combined with a flow of negative electricity in the opposite direction. If this is proved to occur in a liquid, it is probable it occurs everywhere. It certainly occurs in a Holtz machine while the machine is being turned and the terminals connected; the glass plate acts as a carrier of positive electricity for one half rotation, and negative for the other half, the one traveling forward positively charged, the other backward negatively charged.

Plates of zinc and copper immersed in air are under the same chemical conditions as if they were immersed in water. But on the one hand water is a conductor and air an insulator. Until the plates of zinc and copper are made to touch nothing happens in either case because the chemical tendency is uniform all over both plates; though the attractive power of zinc for oxygen is strong, it would be impossible for it to combine with many atoms, receiving their charges without becoming negatively charged as to repel them electrically as much as it attracts them chemically. But directly metallic contact is effected all the oxygen atoms at this point are swept away and a clear passage is opened from the zinc to the copper for the flow of electricity. (The slight electromotive force at the junction need not be considered at present) an immediate rush of negative electricity from zinc to copper or of opposite way occurs. The copper becomes negatively charged, the zinc positively. So far everything goes on just the same in air as in water.

What follows depends upon the conducting power of air and water. In water you have the atoms of oxygen and hydrogen carrying their charges. In air nothing further happens except the slight electrostatic strain into which the air is thrown by the quantity of electricity accumulated upon the metals.

Sir William Thompson has demonstrated this strain by means of a charged aluminium needle placed near such a junction.

Professor Lodge would almost completely ignore the *volta contact force* and would make the effective cause of the whole phenomenon both in water and air to depend upon the greater affinity of oxygen for zinc rather than copper, and if contact force at all it would be a contact force between metal and air.

True Contact Force.—If an electrical current is passed through a homogeneous piece of metal, heat is produced, this heat being quite independent of the direction of the current and is called irreversible heat. Joule has shown that it is proportional to the square of the current strength. But at a junction of two different substances, or even at a junction of the substances in two different states, as difference of temperature, besides the irreversible heat produced by resistance there is a reversible heat produced, which changes sign with the direction of the current so that the current one way actually tends to cool the junction instead of heating it. This is an important fact in thermo-electricity. There is no doubt that there is something at the junction of the metals helping to propel the current along, doing work, in fact, and consuming its own heat in the process. The vibratory motion in the molecules is getting used up in propelling electricity. More will be said on this subject in considering Rust's theory of thermo-electricity. A reversal of the current produces an extra amount of heat which will be added to the irreversible or frictional generation of heat.

Thermo-Electricity.—Mr. Rust, of Leicester, has shown by a most extended series of experiments with couples composed of soft iron for the first, and zinc-antimony for the second couple, that though the iron is almost four times a better conductor of heat than the zinc-antimony yet the first part of the zinc-antimony is heated before the iron. The explanation is, that zinc-antimony, having fewer atoms, takes up and loses heat sooner, and in such a couple it is not the molecules of the iron swinging in friction or vibratory stress against the zinc-antimony that causes the flow of electricity but it is the molecules of the zinc-antimony swinging in friction or with vibratory stress against the molecules of the iron, and the greater the friction and flow of molecular vibrations we can get into play, so long as there is a continuous flow, and no counter electro-motive force or drag brought about, the greater will be the electro-motive force produced. He compares the molecules of the zinc-antimony and iron to two sets of cog wheels with their cogs interlocking but only vibrating, not revolving. The zinc-antimony, moving the sooner, acts upon the series of iron cogs, therefore the faster and stronger the zinc-antimony cogs run, the greater the friction upon the cogs of the iron, and the greater the electro-motive force produced. In water we saw the two processions of atoms carrying their electric charges; of course such a procession would be impossible here, but one could conceive a charge being passed on from one vibrating or colliding particle to another, each would receive a charge from those behind it and hand it on to those in front of it.

Mr. Rust postulates the following theory of thermo-electricity: "The electro-motive force is proportional to the rate of speed at which heat passes the two *junctions.* He has constructed an electrical furnace which has 6,000 of such small elements, and which gives in actual work an electromotive force of 96 volts, with a resistance of 11.5 ohms. I consider the zinc-antimony in these couples loses its heat soonest by doing work—that is, by propelling the current.

Atoms vibrating about a fixed point drive electricity with them, and will not achieve any propulsion. This might be considered the condition of an ordinary warm solid. But if atoms are made to move faster in one direction than in the reverse direction, moving forward quickly and backward slowly, such moving atoms would propel electricity, the force being greater on the forward journey than on the return. One could conceive the forward vibration propelling positive electricity, the backward negative, as we have seen in the case of the two processions in water, and the two currents in the Holtz machine.

I consider the true contact force at the junction of two dissimilar metals or substances to be of the nature of a static *strain*; heat in the thermo-couple being the means of breaking down such a strain, and converting static into kinetic electricity. Wherever a static strain is broken down, a current is produced. We see true contact force in insulators as well as in conductors. The striking effects of frictional electricity are due to the same cause, contact of dissimilar substances, and by their contact electricity becomes transferred from one to the other, the violence of friction being mostly necessary to aid the transfer, so that one becomes positive and the other negative. When such a train is broken down, as in disruptive discharge, a current is produced having electrolytic effects. This has been conclusively shown by Dr. Morton, of New York.

In good conductors such contact forces are feeble, electricity seems to slip through the fingers of a metal, as it were, and the driving force it can exert is weak, while the insulator gets a good grip, and thrusts it along with violence. The metals do not all grip electricity alike. Iron is a metal whose atoms grip positive electricity better than negative electricity; a positive current gets propelled in iron from hot to cold. Copper, on the other hand, acts similarly on negative electricity.

In the foregoing I have laid the works of Professor Lodge and Mr. Rust under heavy contribution.

Dr. Bigelow: Starting out with this long quotation from Hodge, who is pretty well known to some of the members of this Association, it seems to me an endless procession of theories which might be filled up and which would all be required to be substantiated by laboratory and clinical experiments. I do not see but that, brought to its ultimate issue, life itself would be resolved into vibration of ultimate molecules. All the pathological processes would resolve themselves into electricity as to one of the correlative forces of optics and acoustics which are made known to us by the ether of which we know nothing. By the assumption of the ether we know these forces, without it even metaphysical assumption of it is impossible, because these conditions are so interwoven with the physical, and what we know of life is so much a part of the physical that without assuming this it is not convincing. If you go to the metaphysical it is only the assumption of the forces, for we know that human will is a variable force, a variable quantity, and according to researches made at Vienna it has been measured to 16½ feet, and it is a correlative force with electricity, and upon the truth of conservation of forces all these ultimate things will resolve themselves in the same analysis, therefore the question must ultimately resolve itself to a question of the ultimate molecule and potentiality and generation of these conditions.

Dr. Morton: I welcome a paper from our honorary members, and I hope we will have more of them. I am glad to have listened to it, and I think we should give him a good discussion on the subject. I am familiar with some of the authorities brought forward and I sympathize with the direction of his argument, especially in regard to contact electricity, which I have endeavored to make plain by some quotations from the same source from which these were taken.

If there are no further papers before the meeting I think a very happy ending suggested by the last speaker that we have, at least, the ultimate particle, that finest division, as he thinks, of which we can assume, but as he says he shall prepare himself for a further discussion of this subject at our next meeting, I would suggest to him that he pursue the subject further and pass along beyond his ultimate molecule in the regions of the ether and study life and electricity and the great energy of the sun itself.

As Hodge says, the eye is the most delicate organ in the world for testing electricity, meaning that light is electricity, and that the whole region of optics is nothing but a region of electricity, and that the two are so simple in their relations that we have to go back to the mathematical demonstration and admit that light and electricity are one, and that they are only variations in wave length in this endless thing, that great ether whose existence we are bound to admit.

Memorial imparted to the American Society of Electro-therapy, by Dr. Foveau de Courmelles, of Paris, Laureate of the Academy of Medicine, Licencie Es-Sciences Physiques, Licencie Es-Sciences Naturelles, Licencie of Laws L' Rue du Prentemps Malesherbes, Paris:

THE MEDICAMENTAL ELECTROLYSIS.

Galvani, called, at his time, dancing-master for frogs, found the greatest curative way and mechanical strength known to-day. But one is not, with impunity, an innovator and inventor of this world. The happy Galvani, who should have left his name to galvanism, was treated with contempt. He had a successful rival, Volta, from the University of Pavia, who succeeded not in confusing him, but gained also his place in the front row of the electric science. Of the pretended vital force of the former, Volta made the electric fluid, the pile that bears his name and the voltaism.

Before the learned Italians of the end of the eighteenth century, there was only the electrical statics known, the one by rubbing a sulphur bowl between the fingers, like the thunderbolt by de Romas, the abbot Nolles, and Franklin; thanks to their successors electricity was known, no longer in repose, but in activity. They sought and found laws for this displacement, the rules that ruled the phenomena which followed, and their usefulness, both industrial and medical.

One of the applications, the most simple in electricity to the art of curing, is the application on the skin, slightly moistened, of two metals—copper and zinc, for example. If the contact is sufficiently prolonged one obtains burns, with destruction of the tissues. It is, so to speak, a double action —electrical and metallo-therapeutics. We are all impressionable to a metal, which must be found, gold, copper, silver, lead, and which may recover the sensibility annihilated of certain nervous subjects (Burg). By way of retaliation, there exists some metals that are destructive to the organism even by the simple application on the skin; with much more reason this innocuousness is increased if the metal employed brings forth an electric current—otherwise said, if it is a conductor of a rubbing machine, a pile, or a bobbin.

It is again a phenomenon of transport, the fabrication of diamonds owed to Mr. Berthelot; a current passes between two electrodes, one of coal, the other of copper. One discovers on the copper some very small crystals of diamond, and these may use this substance, reputed the hardest and solely useable by itself. In return, the coal is covered by copper. There was then a double transport of one to the other, and *vice versa*. The electrotype gilding and silvering are facts of the same order. I instituted long since a series of experiments to apply to medicine these industrial facts. There are in reality a series of chemical reactions proved by characteristic coloration suddenly appearing; thus: solutions of cyanide of potassium and iron salt separately examined are colorless, but if you bring together one drop of either the blue coloration appears suddenly. I have operated with the currents of galvanic batteries (continuous currents and discontinuous currents) in the following manner: A pullet's skin covering a cyanided paper, the electrodes having been beforehand moistened by a solution, suddenly, through two centimeters in depth, appeared the expected coloration. These phenomenons of transport and penetration by the electric current, the electrical statics (the accumulators) explain the variations of the ordinary electric treatment by the same illness and different patients. The substance of conductors must be varied, which, up to the present, has not been made by any one.

There is the basis of a real medical revolution—the electrical penetration of medicaments. This invention, imparted to the Academy of Sciences the 24th of November, 1890, and the to Academy of Medicine the day after, impassions the physicians at the present day. Since, after my new experiments, the Academy of Sciences, whose members were M. M. Berthelot, Charcot, and the Baron Larry, and the Academy of Medicine, in consequence of my long memorial, elected the same committee, whose members were I. M. A. Gautier, Gariel, and Boucherdat. Even the title of my method was since copied in London. A lecturer in Lyon's University, Mr. Imbert de la Touche, thinking he had the priority, related to the Electro-Therapeutic Society from Paris experiments of the same kind. The *Lancet* related neuralgias cured by cocaine electrically absorbed. The experiments of M. M. Gautier, Newmann, Lawrence, and Arthur Harries have sanctioned my method with the people of cience.

Edison imparted to the Congress of Berlin the fact of a gouty person with nodes cured by dipping his hands, one in a solution of carbonate of lithine, open to the positive pole of a pile, the other in a solution of common salt open to the negative pole. The enthusiasm was great in France after this fact which could be only pure electrolysis destroying the tissues by chemical action, thanks to the electrical act of continuous currents. This dissolution of gouty nodes may have been more rapidly made by the penetration of carbonate of lithium, but would have been produced only by using the electrolysis. This experiment must be accepted with reserve. Besides it is not applicable to the human body, for a man thoroughly immerged in a liquid bath crossed by an electric current is neither penetrated by the liquid of the bath nor by the current, for the latter, which must choose two ways, one say (the liquid's) the other hard (the man's), takes fatally the easier. With two baths for arms the current passes, for having Hobson's choice, it overcomes resistance, closing the circuit. But I regret this method is impracticable for the rest of the organism. This idea put into practice this great while allowed me to dissolve cysts and tumors, and without referring myself as first to the recoveries of patients, I began verifying if the penetration produced itself without the human body. This idea being once proved, I made it practical.

Let us examine the multiplied actions of this method generalized by me. Neither baths nor only application of continuous currents with peculiar electrodes loaded with a substance special for each case. Necessary materials, corsets, probes, trocars, cupping glasses, are built by one of our most eminent professional men, Mr. Chardin. The use, varying according to patients, of several kinds of electricities is made in this manner. All the currents transfer the substances; some continuous; discompose those which are composed, only carrying a part of their elements; the others, discontinous, carry for, and such as they are, the active agents. One distinguishes at once pathological cases to which it would be suitable to apply one or the other of these currents. For tumors, synovial cysts, glands, wens, stone, in fact all abnormal production of local hypertrophy of the organism there are the continuous currents, completed with medical dissolvents, the iodides, the salts of lithium, the bicarbonate of sodium. One understands evidently that if one operated on the skin or in the natural cavities the instrument differs in shape. On the skin a kind of cupping glass helps the electrical penetration of the medicaments by the porosity of the skin produced by a partial gap made in the instrument.

Neuralgia, rheumatisms, hepatic and renal colics, their painful symptoms disappear with the continuous currents descending and the introduction of substances containing opium, aconitine, quinine.

The loss of feeling, muscular atrophy, are destroyed by continuous currents ascending with strengthenings as adjuvants such as strychnine, phosphate of lime, etc.

Paralysis, troubles of the nervous system, normal functions decreased or destroyed, find their master in the discontinuous currents with the introduction in the organism, thanks to them, of tonics or excitants, according to the case. Baths of static electricity with medicamental absorption, electrical descending shower baths are precious adjuvants. This is not a panacea, but a vehicle, a way of transferring medicamental substances.

It is useless to speak of the advantages of this new therapeutic method. With the same, besides the general illnesses on which the action is slow, and must be completed with medicaments absorbed by the mouth, it acts principally on local manifestations. More absorption of nauseous drugs; it is no longer necessary to take them in unequal doses, as neither the digestion nor the circulation requires to be completely saturated before carrying the active agent in infinitesimal quantity to the painful part. Here electricity cures the latter—the penetration is weak but sufficient.

For the stone, not daring to experiment on the human body, I operated in glass.

If a piece of chalk placed in a solution of bicarbonate of sodium is crossed by an electrical current, you see the angles become round, which indicates a destruction of the chalk. This substance being more difficult to destroy than oxalate of lime or urate of sodium, which generally forms the stone. This experience permits one to infer the suppression of painful operations, such as cystotomy or lithotrity. An application made and tried by myself on guinea pigs is based on the following facts: Blunt instruments may perforate the organs. An American had even the audacity to prick the heart with a needle in order to assure himself of the death, and if the patient were not dead, far from killing him, this little operation would resuscitate him. The puncture of pleuritics is also inoffensive, and evacuates the nocuous liquid. They know also that the electrical currents, accompanied with chemical decompositions, kill the microbes. As also, by way of special trocars, of variable dimensions with the cases, one can make pass usefully the electrical medicamental currents; that is to say, cure through the sick organs themselves, perforated for the circumstance. The lungs of the phthisics, in the place of the caverns which are shown by auscultating, are appointed for this treatment. They had often mixed lately, and they mix still, my method, the medicamental electrolysis—double action of electricity and medicament, with the cataphoresis, simple action of transport.

Evidently there is a considerable difference between these two groups of phenomena, the latter being included in the medicamental and electrical actions. In the cataphoresis, you must overcome the resistance of the interposed objects in order to let them pass through the therapeutic substance, as also it is necessary for that to have currents of considerable intensity, dangerous for the patient should there be penetration, or inoffensive without transport, in consequence of insufficient intensity. In my instruments I suppressed resistance of liquids, for a metallic wire of platina carries the current to the contact of the painful part. The active solution is crossed by the current, and arrives also at the seat of the disease. The cataphoresis only utilizes a part of the electrolytic actions, whilst the medicamental electrolysis uses them all.

Let us go now into the clinical province by some typic observance only, reserving to return to them in order to elucidate more thoroughly the question, if it would be necessary.

No. 1. Mrs. J. B., 32 years old. Being attacked by articular rheumatism, great anæmia, frequent syncopes, she cannot be touched on her left knee without crying for pain, and was brought to me in a handbarrow the 15th of September, 1888. Employment of electrodes moistened with following solution: ℞. Benzoas of lithium, iodide of potassium, bicarbonate of sodium, āā 5 grams; aqua distil.; and continuous descendant currents during one hour, from 15 milliampères in intensity, with 5 piles from Charoin with hydrargyre bisulphas.

The 16th—One may touch the patient's knee.

The 17th—The patient can lean upon her painful leg.

The 18th—She is able to step slowly and the 24th recovered. She walks as well as any one. I since saw her again, she looks upon me as her savior.

No. 2.—Mrs. V. D., 45 years old, being attacked with a uterine fibroma, treated in vain beforehand by the electric current, she presented herself before me the 10th March, 1889. I discompose the iodide of potassium upon the current *itself by putting it into the tube open to the negative pole.* According to Faraday's rule which rule the electrolysis, the iodine, leading through the positive pole will enter into the tumor; besides I noticed the discomposing action of the negative pole. At the positive, the iodine freely repelled likewise penetrates into the tissues from the abdomen upon which the electrode is applied. One tumor is — centimeters broad. Three months after the uterus a little bigger than natural is only 4 or 5 cubic centimeters in dimension.

No. 3.—Mr. D. F., 71 years old, presents an enlarged prostate gland with dysuria and uræmic symptoms. The sound does pass over (August 20, 1889). It is time of holidays. I don't meet with any surgeon and decide to undertake the over-pubic tapping. I put a soft sound in the hole made by the trocar; the uræmia leaves off, but my patient being threatened by a probable new fall, I electrofy his prostate, the negative pole put in the urethra, receiving iodide of potassium drop by drop, the positive pole put into the rectum and receiving the same solution. The currents are 5 milliampères in strength, their employment during 10 minutes. After 20 sittings only, the patient recovered, and set out for the country.

No. 4.—Mr. Rene Belin, M.D., from Paris sent me successively two gonorrhœic persons who could not be cured by any other treatment, thinking that my method acting locally would only be able to cure them. I applied nitrate of silver in the urethra by positive pole, the negative touching the perineum, during five minutes. The positive electrode modifying the mucous membrane is put on the more painful parts: 5 milliampères are sufficient, 10 sittings for the first, 12 for the second, are sufficient to the curing. There has the medicamental electrolysis acted as an injection, but made exactly on the painful parts which never happens usually.

No. 5.—Mr. A. B., aged 34 years, left hempilegia in consequence of a phlebitis. The diagnosis was at variance; hysteric hemiplegia, hemiplegia by brain thrombosis. I employ (April 1, 1889), the discontinuous currents with electrodes moistened with strychnine. At first frictions with tincture of nux vomica miscarry, prescribe to erase them. Nevertheless the electric action produces in the arm a medicamental *eruption of strychnine*, even in one pole the too strong action of the vaso-constrictor produces a local cyanosis during some hours. I have chosen typical cases only, but my treatments were more numerous. I keep them at the service of the American Society of Electro-therapia.

(*To be continued.*)

The Germicidal Properties of Milk.—Dr. Freudenreich, after a series of experiments on the action of raw milk on bacteria, has come to the conclusion that it possesses remarkable germicidal properties. He claims that the bacillus of cholera in fresh cow's milk dies in an hour; the bacillus of typhoid fever in twenty-four hours, while other germs die at the end of varying periods. He further found that milk exposed to a temperature of 131° F. loses this germicidal property, as does also milk that is four or five days old.

These experiments will set the physicians to thinking very seriously on the advisability of sterilizing milk for infants' food, or for food of adults. We were just congratulating ourselves on the fact that a means of preventing the introduction of disease into the human body through milk, had been discovered in sterilization. According to Dr. Freudenreich, one might conclude, at first thought, that we were mistaken in our expectations and confidence, and that raw milk is, after all, preferable for human consumption. While this view of the case seems reasonable, yet, in our judgment, it should not obtain; for the experiments in question do not indicate that the sterilization of milk should not still continue, and be considered a great source of protection against the germs which may be found in this fluid. In fact, the object of the artificial sterilization of milk is, first, to deprive the milk of its fermentive properties—that is, to destroy the microörganisms that cause it to ferment; and secondly, to destroy the microbes of disease that may accidentally be in them. The first object named is the chief one.

Whatever Dr. Freudenreich may find concerning the microbicide powers of milk upon disease germs, it is evident that raw milk is not a destroyer of all germs which produce irritant or septic poisons. It is only sufficient to let milk stand, and allow all kinds of germs that may, to live at the expense of it, to prove this to any one. Consequently, sterilization is needed to destroy those organisms which milk in its raw condition is unable to destroy, and these are certainly the most common, as well as the most dangerous, of the germs of milk, particularly in infant foods. It is not so much to destroy the germs of typhoid fever, or tuberculosis, or any other disease, that sterilization is recommended, but to destroy germs which cause the transformation of the various substances composing the milk, and create nefarious products. Granted that raw milk is a bactericide of certain disease germs, this does not militate against its sterilization for the other deleterious organisms which it does not destroy. If, for instance, the bacillus of cholera dies in an hour in fresh cow's milk, and the death of the bacillus of typhoid fever occurs at the end of twenty-four hours, artificial sterilization can hasten this destruction, and kill these germs within a few minutes. So, from a practical standpoint, no matter what may be the germicidal property in the milk, it does not follow that one is warranted to depend on it alone for the sterilization of milk.

The demonstration of the experimentalist named has a great scientific value. Showing, as it does, the microbe-killing power of this composition, this experiment proves, or at least indicates, that milk, for a certain time, contains the properties of certain other vital fluids of the body, such as blood-serum, and it also suggests that probably the transmission of certain disease germs from animals to man through raw milk as generally utilized, is, in a measure, prevented by its natural powers. We cannot see that the discovery should in any sense be taken as an indication of a safeguard against individual diseases produced by milk ferments, particularly the various and numerous maladies of the alimentary canal. We would not even consider it a sufficient safeguard against the transmission of such germs as those of typhoid fever, or other pathogenic germs of a similar nature, because frequently milk is drunk very fresh, several hours before the time which it would require to kill them.—*Bacteriological World.*

The St. Louis Medical College, which was lately made a department of Washington University, is to be housed magnificently. The new building, exclusive of the site, is to cost $107,000.

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SATURDAY, FEBRUARY 27, 1892.

THE PRESENT LEGAL ASPECT OF INEBRIETY AND CRIME.

There are three distinct theories concerning the relation of crime and inebriety, two of which are prominent in the court room, and in all legal circles. The first assumes that inebriety aggravates all crime, that when it is *associated with criminal acts it implies* greater guilt and culpability.

This is expressed in a sentence, "Drunkenness is no excuse for crime," and repeated is if it was an *infallible truth*. In the practice of the lower courts this is assumed to be highest law, and followed more or less closely according to the judgment of the court. The second theory admits that in certain cases inebriety associated, or acting as a possible cause in crime, may be an insanity. Or more especially a condition, or state of brain disease, in which the nature of the crime or the acts of the person are not understood. As in delirium tremens, or alcoholic convulsions or epilepsy etc. The evidence of the mental condition at the time of the commission may be accepted, as a circumstance in lessening the degree of legal guilt and consequent punishment. In both England and America this theory is now a subject of much discussion. The increasing confusion of judges in regard to crimes committed when under the influence of alcohol, has brought out several long *opinions* by many authorities. The general conclusion is that it is at present impossible to lay down rules as to what degree of drunkenness can be urged to mitigate punishment; but that it is wise and rational to recognize certain states in which the criminal should not be considered responsible in the same degree as one who did not exhibit these special symptoms. Those who hold the first legal theory to be sound, refuse to accept the second theory of lessened responsibility, and adhere stoutly to what they assert as a fixed principle, "that no inebriety can ever excuse crime."

The third theory declares that inebriety always indicates brain unsoundness, and incapacity of both reasoning and control of acts. That crime committed while under the influence of spirits always implies madness, *insanity, and defective control* and consciousness of the nature and consequences of the act.

This theory denies the dictum of the first theory, and asserts that no condition of mind or body should be called an excuse for crime, but be considered as a circumstance and factor in determining the punishment or disposition of the criminal. They hold that associate inebriety and criminality indicates a degree *of brain degeneration, that requires long years, and* perhaps a lifetime, of full legal control and responsibility. They hold that the word punishment implies vengeance and capacity to do otherwise; the latter of which is an assumption of psychological knowledge that is not yet attained. This theory is only occasionally recognized in courts, and is regarded with *hostility by the first class*, and by the second as only possibly true in certain cases.

Medically, *the grave injustice of treating* all criminals alike, irrespective of all possible brain states at the time of the commission of the crime, is very apparent. While it is far more rational to consider the nature and circumstances of the criminal and crime, in disposing of the case, it seems irrational to apply means of punishment and remedies that destroy and still further incapacitate the victim for normal living. The recognition of the physical causes of all criminality, and *the application of* remedies for their removal and correction, is along the line of all advanced science. Courts and judges are always bad teachers of psychological science, and the nature and motives of human conduct. While they often ignore medical science and sneer at medical testimony, they cling to superstitions and absurd theories, that are *contradicted* by observation and experience everywhere.

RICKETS.

The bane of children artificially fed is malnutrition. Most of the malnutrition of infancy takes the form of rickets. While we are not yet in position to speak authoritatively upon the effect of infantile rickets upon the future adult, we are ready to admit that it probably has some effect, most likely in increasing the individual's tendency to disease, diminishing his resisting power, with possibly playing a powerful *rôle* in putting him into the great class of defectives. The importance, therefore, of detecting the first signs of rickets is apparent. It is too late to be of the best service to make the diagnosis of rickets when advanced bony changes are present. Anybody can make the diagnosis of rickets when the head is squared, the ribs compressed, the abdomen distended, the wrists and ankles broadened, and the long bones bent. So can anybody passing in the train of a tornado tell what has gone before.

Continuous bowel trouble often leads to rickets; but the earliest sign of the rickets is sweating, particularly at night, and about the back of the head. Next is to be noted a restlessness at night, a desire to remain uncovered, a tendency to convulsive conditions, such as spasmodic croup, or general convulsions; also a tendency to bronchial catarrhs. Some or all of these signs are present before any bony changes become apparent, and they should be the indication for interference. The presence of rickets means that the child has been deprived of some important food element. Usually this is the fat, but not infrequently the proteid constituents of the diet are deficient. When sterilized or boiled or dried milk constitutes the basis of the food, the form of malnutrition is more apt to be of the scorbutic than of the rachitic type. By carefully reviewing the child's dietary the particular deficiency can readily be made out.

By way of treatment, it is first necessary to get the child's stomach and bowels into a normal condition, so that the food administered can be properly digested and absorbed. Then a diet, rich in the elements which had previously been deficient, is to be prescribed. For the infant, proteid food cannot be found outside of milk. But for its fats, not only is milk available, but also cod-liver oil. This latter substance is usually taken readily by young children, and is well borne. Bouchut considered it as a specific in rickets, and when it is considered that fat deficiency is so commonly a cause of this disorder, his belief seems well founded.

The indication for the administration of cod-liver oil to the rachitic infant is to be determined entirely by the character of his preceding diet, and not by its present appearance. If the diet has been deficient in fat, fats must now be given it, even if the child itself be excessively fat. The fat of the rachitic baby comes from the excessive amounts of sugar and starch upon which it has been fed, and it seems that the organism, at least the growing organism, requires for its complete nourishment food in the shape of fat, and merely food which it can convert into fat. The use of salt baths is of great importance in the treatment of this disorder. Medication is unquestionably a secondary importance, and hygienic measures are only of value as they improve digestion and assimilation.

Bitten by a Katipo.—It is not long since a fatal result from the sting of the honey-bee was reported from Tivoli, Pennsylvania. This case is spoken of by the editor of *Insect Life*, November, as well-authenticated. The same journal quotes, in the same connection, a statement from a New Zealand paper the serious, but not fatal, effects of a katipo-bite. The subject of this injury was a waterman of the port of Auckland, who went hunting rabbits on the adjacent island of Motutapu. While there he received a bite on the leg from what he states was a katipo, which caused great pain and subsequent œdema. He was taken to the hospital, and it was considered a possible result that an amputation of his leg would be required. The katipo is a riparian spider, black, with red markings, whose name is derived from the Maori language. The animal is known to zoölogists as *latrodectus katipo*. According to the testimony of the natives the bite of this spider has been known to cause death.

Nerve-stretching of the Sciatic Nerve.—Professor Charcot has recently laid before the Societé de Chirurgie three successful cases of stretching of the sciatic nerve. A postman was injured, six years ago, while going his rounds, by a fall from a considerable height, striking upon the right hip. Great pain along the sciatic nerve followed and persisted for four months. It then subsided, to be again very acute about three years later. It resisted all medical treatment, and Charcot resorted to surgical treatment. One month after stretching, all pain had disappeared, never to return. In the second case, that of an artilleryman with a similar history, one operation was followed by the cessation of great pain. The third case was that of a young soldier who suffered from sciatica of an absolutely rebellious nature, and in this patient the operation produced immediate relief. In concluding his remarks, Charcot expressed some surprise that the stretching of nerves has not been more frequently resorted to. He quoted the results of M. Lagrange, who has reported twelve definite cures out of sixty-six cases, forty-nine improvements (permanent or temporary), four wholly unsuccessful cases, and one death.

Dr. Jonathan Wright, Brooklyn, N. Y., has been selected as Vice-Chairman of Section of Laryngology and Otology, for the Detroit meeting of the American Medical Association. Twenty-five papers have already been promised for this Section, and all others wishing to read papers before this Section should at once send title to A. B. Thrasher, Sec'y, Cincinnati.

American Medical Association, Section on Surgery.—The chairman of the Section on Surgery and Anatomy wishes to have it fully understood, that all who may be desirous of presenting papers at the forthcoming meeting in June, should forward the titles of the same at once to the Secretary. For the proper arrangement of the subjects and the assignment of persons to discuss those of special importance, it is essential that the program should be completed at an early day. J. McFadden Gaston, M.D., Chairman, Atlanta, Ga.; F. W. Mann, M.D., Secretary, Detroit, Mich.

The death of the Parisian surgeon, M. Louis Alfred Richet, took place December 29, in the 76th year of his age. He was the author of a manual of surgical anatomy which passed through four or more editions. He was surgeon to La Pitié, St. Louis, and other hospitals, also at the Hôtel Dieu. He was decorated with the cross of the Legion of Honor in 1868.

DOMESTIC CORRESPONDENCE.

PHILADELPHIA LETTER.

Dr. Benjamin Lee, Secretary of the State Board of Health and Vital Statistics, has just issued his seventh annual report, which reviews the work done during the past year. It also speaks hopefully of the prospects of obtaining from the present legislature an appropriation sufficiently large to enable some needed reforms to be instituted in the near future, and statutory enactments which will place the work of the Board on a firmer basis, confirm its powers and extend its usefulness. The very valuable services rendered by the State Board during the period succeeding the disastrous flood at Johnstown and other places, was duly recognized by the Executive, and in his message to the legislature, Jan. 5, 1891, Governor Beavor appreciatively referred to this work, and recommended that the authority of the Board be increased and that sufficient means should be placed at their disposal to enable its very important work to be properly and thoroughly done.

The Board has endeavored, but without result hitherto, to obtain from successive legislatures, the passage of a law to prevent the pollution of streams passing from one State to another. It appears, Dr. Lee remarks, to be quite within the limits of probability, that before the State Legislature has another opportunity to vindicate its intelligence in this regard, Congress will have passed a National law, which will, for certain of its waters at least, render further action unnecessary. The importance of guarding the purity of the water-supply has been so insisted upon by sanitarians, that public sentiment has finally been roused on the subject to such a degree that legislature will, before long, be compelled to give attention to this important question. Closely related to this question is that of the disposal of sewage of large communities. Every one who has given any thought to the subject will endorse the statement that drainage of inland cities into neighboring water courses is about the worst method of sewage disposal which could be adopted, and yet it is almost universally resorted to on account of its apparent cheapness. The recent report of the State Board of Health of Massachusetts "On Filtration of Sewage and of Water and Chemical Precipitation of Sewage," constituting a volume of 900 pages, is approvingly mentioned by Dr. Lee, who says that it marks a new era in the discussion of this question. During the past year, small-pox broke out in the interior of the State near Johnsonburg, but it did not spread, owing to prompt action by the Board and the establishment of quarantine and general vaccination. Before the epidemic was checked, however, there had been fourteen cases, eight of which proved fatal. The local health authorities of Philadelphia, Erie and Scranton, by the exercise of like promptness, succeeded in cutting short outbreaks of this disease in their own cities during the year. The cases in Erie and Scranton were directly traceable to the receipt of letters from Texas, where the disease was epidemic, thus showing clearly the necessity for disinfection of the mails under such circumstances. The outbreak in Philadelphia was the result of the presence of an infected steamship in the port, the disease having escaped the observation of the port physician in consequence of the eruption being masked by that of another disease.

Diphtheria has been unusually prevalent both in city and country during the last three months of the year. This is attributable to the free communication between the inhabitants of infected houses, and other persons. In view of the extremely infectious character of this disease, and of the fact that there are numerous instances on record in which bodies dead of it have become centres of infection in districts previously free from it, even train hands having caught the contagion from a corpse in transit, the Board on recommendation of the Secretary, adopted a regulation forbidding absolutely the transportation of the body of a person who has died of diphtheria. Typhoid fever has also prevailed to a greater degree than usual throughout the State, and especially in Bethlehem and in Philadelphia. The indications point to a polluted water supply as the chief cause.

Cases of leprosy appear occasionally in our large cities. The dangerous nature of this most loathsome disease, enhanced by its long period of incubation, makes it absolutely necessary that the United States Government should establish an asylum or colony where such cases may be cared for, and the Board has since adopted a resolution expressing its sense of the expediency of such action. Secretary Lee pointedly says, "There are, no doubt, in every large city, cases in hiding which are slowly developing centres of infection, and which would gladly avail themselves of such a refuge were it open to them. Once in this country, they cannot return to their native land, from the simple fact that no vessel will knowingly take them on board, and their treatment under the present regime is more than disgraceful, it is simply criminal."

As an important duty of the Board is to disseminate useful sanitary and medical knowledge, it has, for several years, held an annual sanitary convention, which meets in a different part of the State each year, so as to encourage local interest in sanitary legislation, also the collecting of vital statistics, and abatement of nuisances prejudicial to health. Many valuable papers are read at these conferences, and the public press usually ably seconds the work by giving prominence to the proceedings so that the meetings are usually well attended.

One of the most practical features of the work of the Board is the distribution of pamphlets and circulars treating of the preservation of health, the general management of cases of infectious disease, the protection of the public, the care of infants, the best methods of disinfection, the conduct of funerals, etc., written in plain and popular style and with concise and clear practical suggestions. The number of circulars sent out during the past year was 20,508. The Board's expenses for all causes was less than $4,000.

The positive proof which we now possess of the frequent transmission of typhoid and scarlet fevers through the medium of polluted milk, and the extent to which tuberculosis has been found to prevail among milch cows, especially those of the finer, unmixed breeds, are a cause of great anxiety, especially when we contemplate the possibility of the latter becoming a source of tuberculosis in the human subject. The Board of Health has therefore prepared a circular on the sanitary management of herds and dairies for distribution among farmers and dairymen. The largest Alderney milk dealer in Philadelphia, Mr. George Abbott, has very promptly acted upon the suggestion of the Board, and has sent a circular to city physicians announcing that he has put 44 herds directly under the supervision of responsible veterinarians, who will make frequent inspections of each herd of milch cows, and furnish certificates that those furnishing the milk are free from tuberculosis or other disease affecting the healthfulness as food of the milk, and that the dairy is in good condition. This is an excellent step to take and one that has long been needed; although expensive at the beginning, there is no doubt that this evidence of intelligence and enterprise will prove amply remunerative and lead to increase of business.

At the last meeting of the College of Physicians, H. C. Wood made a personal statement. He had been summoned to New York to give expert testimony in a case of alleged opium poisoning by a medical student, which has recently attracted much attention. Upon reading the newspaper account of his statements in court, he was thunderstruck to find that he was credited with making statements, which he could only account for on the ground that he had suffered with temporary aberration of mind owing to excitement or exhaustion from loss of sleep. He returned to New York at once to see if he might have the case reopened so as to correct any error of statement, such as he found in the published account of the trial. Upon arriving at the office of defendant's counsel, he asked to see the official stenographic report, and his mind was at once relieved by finding that he had been perfectly correct in his statements, but the reporter of the daily paper had been guilty of misrepresentation. What he wished to say about this case was the following:

"The official record of question and answer differs from that published in the newspapers in that it involves a denial of the assertion that I had only one experience in twenty years, and in that the 'yes' of my answer accords with the rest of my testimony in stating that the recorded symptoms did not warrant a conclusion as to the cause of death, whilst the newspaper 'yes' involved the proposition that the girl [illegible] not die of opium poisoning.

[illegible] have neither heard nor read the non-medical testimony [illegible] the Harris case, and offer no opinion as to the justice of the verdict. I reaffirm, however, the correctness of my evidence that death was not proven by the medical testimony to have been produced by morphine. A very wide study of the subject in laboratory, hospitals, and private practice, and in the literature in the three languages years ago, resulted in my writing:

"'The positive diagnosis of opium poisoning from the symptoms alone is often impossible. In the Harris case the symptoms as embodied in the hypothetical question were so loosely observed that many symptoms essential to the diagnosis are omitted and to this is added the fact that the early development of complete coma as recorded is conformable to natural diseases and is extremely rare, if it ever be present, in opium poisoning. It seems to me that the cause of death, so far as the medical testimony is concerned, is enshrouded in an impenetrable mystery.'"

Prof. W. W. Keen performed an operation of unusual interest at his clinic at Jefferson on the 3d. inst. The patient was a lady thirty years of age, married, and a resident of Brazil, she having been sent to Philadelphia for treatment by her physicians, who recognized the gravity of the case. She had been suffering for about nine months with a rapidly growing sarcoma of the thigh, for which Dr. Keen decided to amputate at the hip joint, and, obtaining her free consent to operate before the class, performed the operation, using Wyeth's method of controlling hæmorrhage by transfixion with large pins and the elastic bandage. The feature in the case of special importance is that the patient was between the fifth and sixth months of pregnancy. She had had three living children and one miscarriage at three months. While pregnant with her last child, about eighteen months ago. she had much swelling of the legs, the left being worse than the right. The swelling diminished after the birth of the child but a lump remained in the left popliteal space. In May, 1891, this became painful, and soon after the tumor began to rapidly increase in size. At the time of the operation it extended from the top of the calf nearly to the groin; the circumference of the lower part of the thigh was twenty-three inches and the tumor was about twelve and a half inches long. The lymphatics of the groin were not enlarged. On account of the rapid growth of the tumor and the effect of the disease upon the general health, it was decided to operate without waiting for the completion of term, and it was not deemed advisable to produce miscarriage. The only operation that could be entertained was amputation at the hip joint. Dr. Keen remarked that it was a happy augury that his predecessors in the surgical clinic of Jefferson College, Profs. S. D. Gross and Joseph Pancoast, had performed this operation five times—Gross three and Pancoast two—with five recoveries. The average mortality in 238 cases, collected by Dr. F. C. Sheppard some years ago, was 87 per cent., military surgery giving 93 per cent., civil practice in traumatic cases 66 per cent., and amputation for pathological causes a mortality of only 40 per cent. So far as the operator is aware, this is the first one on record in which the patient was pregnant. Dr. Wyeth, of New York. was present by invitation, and witnessed this operation, which occupied nearly an hour. Very little blood was lost Two rubber drains were inserted and thorough asepsis maintained. The temperature of the patient rose to 101° a few hours after operation, but the next day went down to 100°. Now, ten days after the amputation, she appears to be convalescing rapidly, the temperature remaining below 100° since the slight post-operation rise just mentioned. There has been no bad symptom and no interruption in the pregnancy.[1]

At a meeting of the Philadelphia County Medical Society, February 10, a paper on "Metritis as the Initial Lesion in Pelvic Disease; its complications and treatment by Electricity," was read by G. Betton Massey, in which he paid his respects to the laparotomists and their bucketfuls of specimens, claiming that many ovaries and tubes are removed when the real site of the trouble is within the uterus. This position was fortified by reference to a number of cases, seen by him, suffering from post-operative pain, and the opinion was expressed that the diagnoses were vitiated by the examiner frequently mistaking uterine for ovarian tenderness, when pressing deeply into the lateral fornices. He regarded metritis as the most frequent of all the local inflammatory *diseases of parous women*, and *not unfrequently* found in virgins, it being either the precedent condition or the nidus of many of the most formidable diseases in this locality. The pathology of the disease was dwelt upon at some length, special emphasis being placed upon the microbic nature of the affection, the initial stage—endometritis—being simply a bacterial colonization of the endometrial gland that, being unconquered by the local phagocytes, resulted in hyperemia, hypersecretion and hyperplasia of the endometrium, extending later by continuity of structure both to the parenchyma of the uterus and the mucous membrane of the tubes. It had been said by an eminent authority that the womb has its natural secretions like the nose. This was admitted by the reader, but he pointed out that the nasal secretion was not normally muco-purulent; as soon as pus corpuscles occur habitually in either secretion the existence of a diseased condition was manifestly proven.

A novel explanation of the etiology of endometritis in virgins was offered, which was to replace the masturbation theory of Schroeder. This assumed the continual presence of bacteria within the vagina and cervix in all cases except where there is imperforate hymen, the germs being kept in submission and outside the cavity of the uterus by a barrier of sentinel phagocytic cells, those within the cervical cavity in particular preventing intrusion within the glandular cavity beyond the internal os. Weakness on the part of these sentinel cells is the true casual factor of the disease. A girl whose blood is impoverished by inherited weakness, or whose health has been impaired by the many imperfections in our methods of education, is in but a poor condition to marshal sentinels or defenses against any morbific attack. This view is sustained by success of rational methods of treatment of such cases; let the blood-making organs be restored to health and the invaders, if not too deeply intrenched, will be driven out.

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[1] The *Medical News* will shortly publish Dr. Keen's clinical lecture containing the details of this interesting case, and technique of operation.

For therapeutic purposes, cases of chronic metritis were divided into two classes that resemble the divisions, made by the late Geo. M. Beard, of cases of sexual neurasthenia in the male. In the one class the disease is purely local, the nervous organization of the individual being so robust that it is unaffected by the local disturbance. In the other, slight organic lesion may be associated with profound depression and disorder of the nervous system. It is only of late that the causal relation of uterine disease to these nervous manifestations has been questioned, but of its truth the author had the best of evidence in cases cured only after resort to local treatment. The doubt had probably risen because of a failure to cure by removal of harmless cicatricial tissue from the cervix, and by a lack of neurological training.

As in other subacute microbic affections, the galvanic current offers a typical mode of treating the initial local affection, the author's experience more than confirming the conclusions of Apostoli. The advantages it presented over acids and other cauterants were manifold, some of them being: the possibility of using an elastic application; no piston action, as with the swab; the local effect mensurable and controllable: and the important addition of sorbefacient and muscle-contracting powers. In simple endometritis and hæmorrhagic conditions the positive pole was preferable, owing to its greater antiseptic power; but in the stage of hyperplasia the alternative method was advised. The latter method, or even the faradic current, would act quickly in the subinvolution variety. When the appendages are apparently involved, these methods are to be preceded by a course of vaginal treatment, and the intra-uterine treatment reserved for the facilities offered by a sanitarium, in which the applications are made at the bedside and followed by prolonged rest. Where the nervous system is seriously affected the local treatment should be supplemented by general applications of the faradic or galvanic currents, massage, rest, and overfeeding.

In the general discussion following the reading of this paper there appeared to be a significant decrease in the hostility usually displayed by surgical gynecologists to any mention of electricity in treatment of diseases of intrapelvic viscera.

At the same meeting the President of the society read his annual address, entitled "The Philadelphia County Medical Society in 1848 and 1892." Several other communications were presented.

The new laboratory of hygiene of the University of Pennsylvania, described in a former letter (Vol. xvii, p. 778), will be opened with appropriate ceremony on the 22d inst. A large number of guests have been invited to attend the opening exercises to be held in the library at 3:30 P.M. The programme will be: Prayer by the Rev. Dr. George Dana Boardman; presentation of the new building to the Provost and Trustees by Dr. S. Weir Mitchell, Chairman of the Committee; acceptance on behalf of the Provost and Trustees by Provost Dr. William Pepper; address by Dr. Benjamin Lee, Secretary of the State Board of Health, followed by an address by Dr. John S. Billings, Director of the Institute. The President of the Massachusetts State Board of Health will be present by invitation and deliver an address. The appointments of the new building are as complete as possible, and the course will be at once begun. It is expected that another course will begin about April 2. This school of hygiene has been established largely through the special interest and pecuniary assistance of Mr. H. O. Lea, of Philadelphia, as previously indicated.

The venerable Pennsylvania Hospital is about to be enlarged by a wing on Spruce street, which will, when completed, increase its capacity by over one hundred beds. Plans have already been adopted, and the work will go on at once. The estimated expenditure is over $300,000. It is expected to erect, also, a nurse's building upon the grounds of the hospital, and an out-patient department upon Spruce street, nearly opposite its present location.

The Woman's Medical College of Philadelphia is in a thriving condition, and has a larger class than last year. On the matriculation list are four students from India (one a native), one from Brazil, two from Russia, one from England, one from Canada, with others from distant States—Maine, California, Texas, Mississippi, Georgia, Tennessee, Alabama, Wisconsin, Iowa, and Utah. The total number in attendance is about two hundred. Of the thirty-seven graduates of last May, one, a colored woman, was the first woman of any race to pass the Alabama State Medical Examining Board; another stood first in the competitive examination as Interne at the Philadelphia Hospital. The Young Woman's Christian Association in connection with this college have leased, for a term of years, a house opposite the Woman's Hospital. This building, known as Brinton Hall, contains a reading-room, sleeping apartments, quiz rooms, and a restaurant, for the accommodation of the students of the school. The college building was furnished with fire-escapes during last summer, and has recently been fitted throughout with incandescent lights. Besides the recent election of Prof. Frederick P. Henry to the Chair of Practice, which has been already announced, the appointment of Dr. Harriet E. Lothrop as Demonstrater of Histology deserves more than a passing notice. Dr. Lothrop is a graduate of the University of Zurich, and spent a year in Prof. Klebs' laboratory, so that her qualifications for the position are unsurpassed, and her appointment gives general satisfaction to the friends of the school.

The Trustees of Jefferson College are still considering the question of ways and means in connection with the removal of the college to a more suitable location, which will probably be on South Broad street.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

I have just seen in THE JOURNAL of January 2, in your report of the proceedings of the Mitchell District Medical Society, the following as purported to have been said by me, in reply to Dr. Wathen's discussion of Dr. Reed's paper. "The speaker said Dr. Wathen had made a statement that should not go unanswered, which was, that all young girls up to 20 of age, who suffered from irregular menstruation, should be examined, looking, he supposed Dr. Wathen meant, for cancer." At the meeting referred to I jocularly referred to some remarks made by Dr. Wathen, but for fear that the interpretation of what I said might be misconstrued, I write to correct the idea that Dr. Wathen meant to convey any such impression that every young girl up to 20 years of age, should be examined, that suffered from irregular menstruation. Certainly I would not have the impression obtain that I had so misrepresented him. Dr. Wathen is too well known as an authority in diseases of women, for any one to suppose that he would make any such statement as is attributed to him in this report. What was said as a jest at the meeting, appears as a serious statement, in print. Please do me the favor to insert this correction. Yours Respectfully,

J. M. MATHEWS.

Louisville, Ky., Feb. 16, 1892.

Clinical Instruction and the Cook County Hospital.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

An editorial in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION of January 16, 1892, under the caption "Physicians as Politicians," refers to my remarks at a recent banquet of the Practitioners' Club, in regard to the relation—or rather, no relation—of the Cook County Hospital to medical education.

The worthy editor politely introduces me, with a complimentary adjective, as having "directed attention to the fact that in the great Cook County Hospital the teaching of students is absolutely prohibited." He then proceeds to write at large, thus: "and at once entered upon a tirade against politicians and their methods, saying he hated them as he does sin and the evil one." This slighting reference to politics is seized upon as a text from which an editorial opinion is given of gentlemen "who imagine themselves particularly good because they keep aloof from politicians." The sermon, continuing, points out, *ex cathedra*, how the good doctor may, by mixing prayer-meeting solicitations for votes with ward statesmanship, perform a religious duty, as well as open the doors of the hospital.

The above seems to me an honest application of the appeal. The remarks at the Club referred mainly to the shameful position of the hospital in its relation to clinical teaching; and in that connection it was but natural to express one's opinion of politics and its unnaturally close relation to the hospital. It is to clinical work that I wish to take further occasion to refer. "Physicians as politicians," *per se*, could not tempt me to the trouble of a reply; but, in passing, I would say, in explanation of the "evil" allusion, I take no credit for entertaining the highest respect for politics in its ideal significance—the science of government—nor do I think one sounds a pharisaical trumpet if he voices his hatred for the contemptible thing known, by common consent, as politics—the scramble of parties for place, power, and personal ends. A "religious duty" of the doctor is to become a skilful physician. This fully attended to will leave little time to devote to the arduous task of placing himself in harmonious relation to the environment of a medical politician. And the game is not worth the candle. The acquisition is usually earned at the expense of the reputation, practice, and skill of the physician.

But to the chief point: the opening of the doors of the hospital to the medical student. So long as they are in the keeping of "ward statesmen" there is little hope they will be opened, or that the institution will be managed, not in the interest of the managers, but for the welfare of mankind within and beyond its walls. If the fifteen hundred or more physicians of Chicago, and especially those engaged in teaching in the multitudinous colleges and schools, would undertake to demonstrate to the public the inhuman attitude of the hospital towards medical education, they would break with the power of the demagogues and place the institution in proper non-political hands.

Volumes might be written upon the study of medicine. I cannot forbear one remark: the most radical defect in the requirements of the medical colleges is the facility of matriculation. Perhaps the time has arrived when every applicant should bring to his medical studies the degree of B. A., or its equivalent. It certainly is at hand when he should be familiar with such subjects as physics, biology, botany, drawing, English, French, German, and know some Latin and less Greek. The complaint is not only that the would-be student does not bring this necessary knowledge and mental training to the pursuit of a many-sided science and art; but that too often the matriculant exhibits his qualification for the pursuit of an advanced study by his evident unfamiliarity with his native English friends, the three Rs.

In spite of all that was so ably said at the banquet in favor of didactic and laboratory instruction; and the just criticism of the too common farce called clinical teaching, as illustrated by the talking to large classes in the presence of a patient who, for any useful purpose, might be replaced by a "dummy"; the proportion of time given to didactic and clinical instruction should, I think, be so changed that two-thirds to three-fourths of the whole be devoted to the clinical.

In a special report, prepared for the U. S. Bureau of Education by Dr. N. S. Davis, we learn the first permanent general hospital for the sick was established in Philadelphia in 1752, and Dr. Thos. Bond, from the opening of the Institution, introduced his class for bedside instruction. In 1765, the College of Philadelphia, the first in America, required of the candidate for M. B., attendance upon one course of clinical lectures and the practice of the Pennsylvania Hospital for one year, etc. If we deem such an aboriginal college furnishes a poor precedent for clinical work, let us examine its further claim upon us as a worthy guide to this nineteenth century evolution. "If students have not taken a degree in any college, they shall satisfy the trustees and professors concerning their knowledge in the latin tongue, in mathematics and philosophy as shall be judged requisite for a medical education, etc." Now to the moderns: In the announcements at hand of the College of Physicians and Surgeons, and the Chicago Medical College, the former requires, for graduation, attendance upon two full winter courses of hospital, college, and dispensary clinical instruction; the latter, "hospital attendance of at least two terms." The medical teaching in the Continental colleges is, for the most part, clinical in every department. What more evidence is required of the value of clinical study than the practice of the oldest and best, and the prescription of the youngest colleges. The efficiency of any method of education can be best determined by the results. And, if we look for the factor, which, more than any other, has produced the most famous and skilful physicians, it will be found in their intimate connection as students or practitioners with hospital bedside study and practice. The necessity for more extended practical teaching seems to me to require neither argument nor illustration. Since there are not a few who think differently, a further illustration may be allowed. Is the attempt made, for instance, to teach histology by a dissertation upon the laws of optics, the construction of the microscope, and the appearance of cells and tissues; or anatomy, by a description of what may be seen, or of what manner a man is or might be composed, perhaps upon an improved plan? By no means. Then why, pray, so much prating about the knowledge to be gained by inspecting, feeling, listening to and smelling a patient, when the whole descriptive verbiage would not enable the graduate to recognize, say, the subject of small-pox, whom he might meet face to face; while any nurse or mother, who had seen one case, could put to shame the doctor, replete with didactic precepts, in his attempt at a diagnosis. In short, is not the exercise of the senses more instructive than listening to a description of how to listen, see, touch, taste and smell? True, theory is valuable, but "life is short and art is long," and the economic and scientific method, first, last and always, is fact first, then, to what time remains, theory. All this is an attempt to show that we, as teachers, do require every avenue to clinical teaching to be unbarred. The Cook County is the only hospital, within my knowledge in any country, except Western America, Christian, pagan or agnostic, which does not throw wide open its doors for bedside instruction.

Imagine a stranger (*e.g.*, a Winkle), eager with expectation, who visits its spacious buildings, full of promise and six hundred patients, with a history of two decades, inquiring for its accumulated stores of information contained in its pathological museum, its hospital records and its library, etc. Think of the disenchantment of the seeker of knowledge as the compassionate and sympathizing interne replies: "All the stores you ask for, along with a goodly number of unfortunates, lie buried, and not even tombstones rise to mark the sites." True, during the past four and twenty months, we have erected a few numbered stakes (clinical records). You certainly cannot reside in Chicago, for you have mistaken this place. This is the home, *par excellence*, of politics and politicians, and it is not open for inspection. Their record is too unsavory to offer you, but we keep some very good wines and beer. Cook County Hospital took up its present abode about 1872. From that date until 1878 or 1880, all went merry as a marriage bell. The staff and the internes were allowed the proper privilege of teaching students at the bedside. About the year 1890, the Hospital Board and the late Dr. James Ross, one of the staff, "had a little difference," which resulted in the adoption, by the Board, of a resolution to prevent bedside instruction. That bad precedent stands from year to year unrepealed, and, beyond question, has wrought a thousand-fold more injury to the inmates and humanity, than would have the alleged abuse of privilege which the resolution sought to correct. Physicians and rational men recognize the great advantage of clinical teaching to the cause of medicine, while some rational men seem unable to perceive that it is the *people* who are, in purse and person, sufferers, when prevention and pills are administered by the badly educated and unskilful. The indispensable qualifications of every member of the hospital staff should be eminent ability and a willingness to work. It is an open secret that members, who are not the ablest exponents of the principles and practice of medicine, have, at sundry times, been elected, so that only a fraction of the staff could, under any circumstances, give the kind of instruction to which every student is entitled. The annual election of the Board is the signal for turning topsy-turvy the whole staff, a few only of whom "righten up" for a second year's service; the remainder being kept under by the stronger 'grip" of the new men to the skirts of the new board. All too evidently, the political factors are responsible for the fabrication of all the related first-class defects enjoyed by "the Cook County Hospital."

Could the abuses and defects be remedied by purifying politics? No, Mr. Editor. The herculean task of the Augean stables would be in comparison child's play. Were the thing possible, then the millenium! Only 5 per cent. of the inebriates relapse after "the specific" into incoördination, but even the injection of gold is impotent to lessen the appetite or aptitude of certain for crooked ways.

The evils would be lessened by electing the Board for a longer term, thus securing a longer service for the staff, who would thereby be less easily displaced and take a more stable interest in promoting every good work for the hospital. Then, for example, their increased influence might secure sufficient alcoholic extract of the $190,000 annually expended upon the institution, to conserve some such valuable specimens as have gone to waste on account of a discriminating parsimoniousness, or some less excusable reason. The basal requisite for reform involves some method of appointing a non-political board composed of able, large-minded and philanthropic men. The appointment of such might be placed in the hands of the Governor of the State of Illinois, and the term of office be during good behavior. The staff might be elected by the board from the nominees of the various city colleges and schools, and from other nominees of non-school men, such as compose the medical societies. The staff should hold office for life and vacancies be filled from nominations by the staff and election by the hospital board. Such a method would probably guarantee such desiderata as the best care of the patients, the freest and ablest clinical teaching, the advancement of medicine, and the greatest good to the greatest number.

W. Franklin Coleman, M.D.,
Prof. of Ophthalmology Post-Graduate
Medical School of Chicago.

New Mexico for Consumptives.

To the Editor of the Journal of the American Medical Association:

In conformity with my promise, I send you this report. Ever since 1872 I am a resident of the United States, but every other year, and sometimes every year, I take a trip to Europe, where I attend clinics. Three years ago, I had the opportunity of listening to several lectures by some eminent professors in Paris. Their subject was phthisis. After several meetings with some of these gentlemen, I was entertained with a proposition to find a more suitable climate to establish a sanitarium for consumptives, at an altitude of from 4,000 to 5,000 feet above the ocean, not too cold, not too warm, without much rain, neither fog, and especially avoiding snow. The object of finding such a climate, was to permit the patients to be out of doors as much as possible, and even to have them sleep in the open air seven or eight months of the year. In Germany, a great many patients are kept in pine forests, and some of them find relief by the emanations; but lately a great many prominent physicians of all nations found that it was not only the pine emanations, but the pure air which benefited them the most. It was also with the same belief that a French medical society was formed to rescue the consumptive children from that deadly disease.

For over two years I traveled, most of the time in North, Central and South America. I have found a great many good locations, with finest scenery, but almost everywhere there is some objection—either too much moisture in the atmosphere, fog, cold, snow or excessive altitude. After traveling all over the Pacific coast, Nevada, Arizona and Colorado, I had the good fortune to meet with Mr. H. F. Grierson, of the Santa Fe Railroad, and traveling together for several months, we came to see every place of interest in New Mexico, Texas and Old Mexico. In the Territory of New Mexico we found numerous good places, but some rather too cold, some too high altitudes, and others too much snow for certain classes of patients. By gathering a great deal of information from old residents I found malaria existing more or less, all along the Rio Grande, and another objection to the valley is the dust brought by the river, which is so fine as to fly at the smallest breeze; but altogether the best climate, with the most sunshine, is to be found in Southern New Mexico, although some difference must be made on account of the temperature. In fact, I was never satisfied until I found the San Augustine plains, with an altitude of 4,800 feet above the sea, surrounded by mountains 1,200 to 1,500 feet higher, with unsurpassable drinking-water, and also mineral waters—one spring containing a great quantity of peroxide of iron and manganese, and others containing sulphate of lime, etc., in enormous quantities. But the grandest of all is the level plain, 170 miles long and about 80 miles wide, all covered with palms, cactus, saponaria, Panama plant, soap weed, etc., and every kind of flower all the year round, giving the best opportunity for riding, either horseback or in any kind of vehicle. The temperature is the most even, the thermometer all the year around at an average of about 62°, with scarcely any snow fall, and when it does snow it does not last more than an hour or two; no dust, no malaria, and the soil is the most porous that can be found anywhere.

There are some samples of consumptives, cured, residing here still, who, when they first came here, were not capable of walking alone, and who are enjoying good health ever since. There is a peculiarity in this country. No sooner does any one get there than he feels happy! The amount of rain for three years was an average of about 4 inches a year. Fogs are entirely unknown, and very seldom is there great wind. There is plenty of game of all kinds, good fishing; beautiful shade trees grow at the foot of the mountains. There any patient can sleep out of doors eight months of the year without fear of taking cold. Respectfully yours,

A. PETIN, M.D.,
Commissioner Société Médicale de Paris.

Las Cruces, N. M., November 16, 1891.

SELECTIONS.

THE ACTION OF STRYCHNINE UPON THE CEREBRUM.—It has heretofore almost been regarded as an accepted fact that strychnine has no influence upon the cerebrum, but only upon the gray substance of the spinal cord and medulla oblongata. According to late investigations by Biernacki, this is not correct. After the subcutaneous injection of small doses of nitrate of strychnine on rabbits, the electric excitability of the cerebrum was found to be distinctly lowered. The effect was the same when strichnine was brought directly into contact with the cerebrum. The results of these experiments seem to throw some light upon the curative action of strychnine in cortical epilepsy and other irritative conditions of the cortex cerebri; and they also serve to explain the beneficial effects of this remedy in sleeplessness as recommended by Lauder Brunton. The influence of strychnine upon the nervous system has also been investigated by Paulsen, who finds that large doses cause a general paralysis of the central nervous system.—*Journal of Nervous and Mental Disease.*

ON THE TORSION OF ARTERIES.—In connection with operations for excision of tumors, and other excisions of a like character, Jonathan Hutchinson remarks as follows: "I may mention that for many years I have quite ceased to use any other means for arrest of arterial bleeding than torsion. In excisions of the breast, for instance, I do not think that I have during the last fifteen years ever used a ligature. The torsion is always effected by a pair of Wells' clamp-forceps, now in such universal employment. I am always extremely careful to close all vessels, keeping the wound exposed for a considerable time for that purpose. Very seldom, indeed, have I encountered any secondary hæmorrhage."—*Archives of Surgery.*

THE ACTION OF CHLORAL HYDRATE ON THE KIDNEYS.—Since the publication of Liebriech's monograph on chloral, there has been no study of the action of this remedy on the kidneys sufficient to explain results which had been sometimes noted to follow the use of this valuable hypnotic. Dr. Cavazzini has, however, recently made some experiments in this connection on dogs and guinea pigs, and he has found that when injected into the abdominal cavity, chloral hydrate produces marked irritation of the secreting cells of the kidneys. Even after the first injection it causes visible granular degeneration of the epithelium of the convoluted tubules, while after prolonged administration the epithelium of all renal tubules undergoes degeneration, with the single exception of that of the straight tubes.

In more severe cases it produces swelling of all the renal epithelium, with other symptoms of acute parenchymatous nephritis, although the Malpighian glomeruli are never affected, nor is there ever any implication of the interstitial connective tissue.

The intensity of this destructive process depends partly upon the duration of the poisoning, partly also upon the individual's susceptibility. If the remedy is introduced through the stomach, it may likewise produce degenerative changes, but not to as marked a degree or as rapidly as when it is injected into the peritoneal cavity. The lesions thus described of the renal tissue are stated by the author to disappear after suspension of the use of this drug. Nevertheless, the author states that in none of the cases in which the post-mortem examination proved this condition to be present, did he ever during life succeed in detecting any albuminuria, a fact which will, perhaps, explain the great scarcity of clinical observation pointing to the danger of chloral from its action on the kidneys. The author's observations, however, show that the kidneys are liable to marked disorganization from the action of chloral, and should serve to indicate the necessity for great caution in the employment of chloral in cases where the kidneys are already affected.—*Therapeutic Gazette.*

THE COUCH.—A ROOM IS ONLY HALF FURNISHED WITHOUT ONE.—A room without a couch of some sort is only half furnished. Life is full of ups and downs, and all that saves the sanity of the mentally jaded and physically exhausted fortune fighter is the periodical good cry, and the momentary loss of consciousness on the upstairs lounge, or the old sofa in the sitting-room. There are times when so many of the things that distract us could be straightened out, and the way made clear, if one only had a long comfortable couch, on whose soft bosom he could throw himself, boots and brains, stretch his weary frame, unmindful of tidies and tapestry, close his tired eyes, relax the tension of his muscles, and give his harassed mind a chance. Ten minutes of this soothing narcotic, when the head throbs, the soul yearns for endless, dreamless, eternal rest, would make the vision clear, the nerves steady, the heart light, and the star of hope shine again.

There isn't a doubt that the longing to die is mistaken for the need of a nap. Instead of the immortality of the soul, business men and working women want regular and systematic doses of dozing—and after a mossy bank in the shade of an old oak, that succeeding Junes have converted into a tenement of song birds, there is nothing that can approach a big sofa, or a low, long couch placed in a corner, where tired nature can turn her face to the wall and sleep and doze away the gloom.—*Med. and Surg. Rep.*

THERE are some women of the brunette type, usually with an olive skin, sometimes with a fair skin, who have the misfortune to bear upon their upper lip or on the sides of their face, just in front of their ears, a growth of fine, dark hair. The hair is of the lanugo variety, and is noticeable only on account of its dark color. The application, by means of a camel's-hair brush, of hydrogen peroxide, will bleach the hairs, and render them invisible except on very close inspection. As a preliminary measure, it is well to wash the growth with a solution of powdered borax in water, to remove the grease which adheres to every hair. The application should be made several times a day until the hairs are thoroughly whitened, and after that as often as is necessary to maintain the color.—*Maryland Medical Journal.*

A NOVEL USE OF A BENZOINOL SOLUTION OF MENTHOL.—Dr. Elizabeth N. Bradley has sent us a brief note on the case of a patient, 64 years old, of a rheumatic diathesis, who had been suffering for several days from the pneumonic and cardiac complications of la grippe, when an attack of acute prolapsed hæmorrhoids ensued one night. The usual remedies having proved unavailing, either in alleviating the pain or in overcoming the spasm of the sphincter, it occurred to the doctor that spraying the hæmorrhoids with a benzoinol solution of menthol, which had proved very efficacious in controlling a paretic tendency of the laryngeal muscles in the same case, might so stimulate the muscular structure of the hæmorrhoidal veins as to accomplish a sufficient diminution in the volume of the piles to render them reducible. The spraying of the hæmorrhoids was followed almost instantaneously by a cessation of pain, and by such a decrease in the volume of the tumors that their spontaneous reduction speedily ensued. —*N. Y. Medical Journal.*

THE TREATMENT OF SQUINT BY ADVANCEMENT OF THE RECTI MUSCLES.—Bronner (*Ophth. Rev.*, July, 1891) bases his opinions on the records of fifty cases of strabismus treated by advancement of one of the recti muscles according to Schweigger's method. He thinks it of the greatest importance that the size and condition of the muscle should be ascertained as nearly as possible before the advancement is performed. In many of the cases, tenotomy of the antagonistic muscle was necessary, and in some tenotomy or advancement had to be done on the muscles of the fellow-eye. In cases of divergent strabismus, tenotomy of the externus and advancement of the internus were necessary. In no case should the same muscle be cut more than once. Bronner thinks that the advancement of the muscle is the best operation in all cases in which the squinting is amblyopic, and in which the angle of deviation measures more than 30°.—*N. Y. Medical Journal.*

THE OPHTHALMOSCOPIC APPEARANCES IN HYPERMETROPIA AND THEIR SIGNIFICANCE.—Bristowe (*Ophth. Rev.*) considers that the peculiar appearance called the "hypermetropic disc" is found at all ages, and probably continues through life. It in no way interferes with the acuteness of vision, nor damages the usefulness of an eye, nor has it any definite relation to the degree of hypermetropia. An intense "pseudo-neuritis" may be present with a very low degree of error. The "watered-silk" retina exists only in early life, probably in infancy, and disappears with the advent of puberty. The "concentric striation" appears under exactly the same conditions as does the "watered-silk" retina, and like it has no relation either to the acuteness of vision or to the degree of error. He thinks there are two forms of hypermetropia—one where the eyeball is fully formed but has an abnormally small antero-posterior diameter, and another in which the hypermetropia is due to the immature development of the globe and its contents.—*N. Y. Medical Record.*

THE TREATMENT OF BLEPHAROSPASM.—Allport (*Amer. Jour. of Ophth.*) advises that spasm of the orbicularis muscle be treated systematically by stretching its fibers forcibly. The procedure consists merely in placing a strong, short speculum between the lids, and opening its blades until it is deemed that the muscle has has been thoroughly stretched. The speculum is then firmly set, and allowed to remain in its expanded condition for about five minutes, when it should be removed. The procedure is quite painful, and in some cases may require general anæsthesia. It is often advisable to repeat the operation several times at intervals of a few days.—*N. Y. Medical Record.*

DR. NICHOLAS SENN has been invited to address the British Medical Association, at its next meeting, on intestinal obstruction and intestinal anastomosis.

RECENT MODIFICATIONS IN OUR VIEWS OF ENTERIC FEVER AND ITS TREATMENT.—Since Murchison wrote his classic treatise on enteric fever, we have added almost nothing clinically to the accurate and scientific description he gave of the disease. He covered in that description almost the entire ground in connection with the disease and its history, and in his reasoning as to its etiology he foreshadowed much that bacteriology has since discovered regarding it. In fact, it is only in its bacteriological aspect that any additions have been made to the subject, and it is from this side alone that any additional knowledge is likely to come which can finally determine the mode of its origin. The additional data, however, which we now possess have considerably narrowed the issues, and enabled us to regard the malady as an acute infective disease, in which, as in phthisis and pneumonia, a special bacillus plays the important part.

Since the typhoid bacillus was discovered by Koch and Eberth, and its peculiarities and mode of growth studied, more especially by the latter observer, our views as to the etiology of the disease have considerably changed, and the time has, I think, now come when, taking account also of the experiments of various other bacteriologists, we may form more definite ideas as to its mode of propagation, its prevalence at particular seasons, and the causation of the symptoms present in its various stages, and therefrom deduce some rational means for treating it.

I shall first refer to the typhoid bacillus and its discovery. In 1880, Koch and Eberth almost simultaneously discovered in the intestines, the mesenteric glands and lymphatics, and especially in the spleen, of patients dying of enteric fever a bacillus, which, though frequently found in the intestines in a form resembling the common *bacterium termo,* induced at particular seasons, or owing to some alteration in the normal vital resistance of the individual, an acutely infective process, infiltrating the adenoid tissue and lymphatics of the intestine; and this was accompanied by the chain of febrile phenomena we designate typhoid or enteric fever. Owing to the difficulty of finding a suitable nutrient medium on which to grow it outside the body, this bacillus could not be differentiated from other bacteria inhabiting the alimentary canal, until Koch succeeded in isolating and growing it on dry gelatine plates; and since then all pathologists are familiar with its appearance and mode of growth. So far all experiments have failed to produce the disease from these cultivations by inoculation; but bearing in mind that it grows both as an ærophyte and as an anaerophyte, it may be innocuous in the former condition and infectious in the latter when in the alimentary canal, whenever the vital resistance of the tissues in that situation is from some reason altered. What may produce these alterations I shall allude to presently. Gaffky, in his observations on this bacillus, has given us some valuable information as to its situation and mode of growth. It is one of the few bacilli found to develop freely in water, and it grows abundantly in milk. He also found it in the soil through which water percolates, and it grows freely in all albuminous media. He also found it to be more abundant in all these media in the autumnal season than in any other; this is a fact of considerable significance. If, however, this bacillus is found so frequently in the food we eat, the water we drink, and in our intestines, how, we may ask, is it that it does not infect the intestinal glands and produce enteric fever in every case? For we must all take it in at some time or other, if it is not already present in our intestines. With this question I may link two others—why is it we do not constantly suffer from pneumonia when we always carry about with us the germs of the disease in Fränkel's diplococci? And why do we not suffer from circumscribed or diffuse suppurations when the micrococci that produce them are so frequently present in our blood or tissues?

Why we do not, recent investigations on bacteriology have helped to make clear. Bacilli or micrococci are in themselves harmless, whether in the blood or in the tissues, until the vital resistance of some tissue is lowered from either functional alteration or injury, when they readily find therein a suitable soil on which to grow and multiply. It is by this growth and the chemical products generated during the process that the mischief is induced, and the weakening of the tissues around that are most susceptible to their action then affords a further field for the growth of these microörganisms.

Let us first consider in this connection the experiments of a distinguished physiologist, and secondly the course of a fatal disease which clinically we are only lately becoming familiar with, to illustrate my meaning. Professor Kocher, of Berne, produced with a hot iron destructive injury to tissues down even to the marrow of bones, but could not produce septic inflammation so long as the animal experimented on was healthy: but if he lowered the vitality of it by feeding it on putrid matters, permitting thereby septic micrococci to enter its blood, a septic inflammation was at once produced. The other disease I have alluded to in illustration, namely, septic or suppurative endocarditis, arises from either the staphylococcus or streptococcus, when present in the blood from any accidental cause, finding a nidus in an inflamed endocardium or damaged valve; and the chemical products of its growth are then carried by the blood current to set up mischief in other situations, where from anatomical causes or lowered vital resistance the blood and tissues cannot overcome its invasion. The germs of typhoid fever, like all other pathogenic germs, must be regarded as in themselves harmless so long as the tissues with which they are in contact are healthy, else how can we explain the immunity from the disease that exists in healthy individuals who constantly either receive them through food or drink into the alimentary canal or have them normally or constantly resident in that situation?

This brings us to the question of the etiology of the disease. If we take it for granted that the bacillus of Eberth is, by its infiltration of the glandular tissues of the intestine, the cause of all the mischief (and apart from the absence of inoculation evidence most pathologists are agreed that this is so), what are the conditions that favor or produce its acute infection of those tissues?

We have first the evidence that this bacillus is found growing most luxuriantly, and we must presume consequently more virulently and more capable of making a vigorous battle for its existence, in the autumn. But it must find the tissues with which it comes in contact in a weakened condition to get the upper hand in the struggle.

Are the intestines at this period of the year in a more weakly condition than at any other, and if so, from what cause? I think we can answer that question in the affirmative.

Most of us are familiar with the gastro-intestinal troubles that are characteristic of the early autumn months. The gastro-intestinal catarrhs, the catarrhal or autumnal diarrhœas, and the frequent so-called bilious attacks at this season, are familiar to all. How these catarrhs are produced we may readily explain by the rapid fall of temperature in the evenings, after perhaps a warm mid-day, when the action of the skin is suddenly checked and no additional precautions as to clothing are adopted. All hospital physicians are familiar with the sudden onset of bronchial catarrhs at this season, also from the same cause, and with the rapid filling of hospital wards with cases of asthma, emphysema, and fresh broncho-pneumonia in cases the subjects of phthisis during the previous summer and spring. Now let us see if this gastro-enteric catarrh is a usual precursor of enteric fever. Murchison, with that acute power of observation which was characteristic of him, mentions it as a most usual symptom preceding and accompanying the fever in its early stages, and he further adds that catarrhal diarrhœa is frequently present preceding the fever, and that it is often difficult to say whether the disease will remain catarrhal diarrhœa or end in enteric fever. Now, it seems to me that this catarrh, in addition to being brought about by atmospheric changes, or food, may be produced also from the absorption of the chemical products of the typhoid bacilli growing in the intestinal contents, when they are present in large numbers in either food or drink; and that the toxines they thus produce are merely the weapons they use (as Professor Burdon Saunderson expresses it) in their struggle for existence, to weaken the vital resistance of the tissues with which they were in contact and make them fall an easy prey. Why, however, should the glandular tissue be the first overcome in this struggle? The reason seems to me obvious, looking at the matter from a pathological point of view. Adenoid tissue is endowed with a very poor vitality, and has very little power of resistance or of repair when infiltrated or choked from any cause. We see this when it is attacked by a similar microphyte, the tubercle bacillus, whose life-history and power of infiltrating and destroying glandular structures are somewhat similar to those of the typhoid bacillus. The epithelial shedding and proliferation of the mucous membrane which takes place must also weaken the defences against the bacillary invasion. The bacilli find the glandular tissue of the intestine in a condition of derangement from the effects of this catarrh, and it becomes the centre of their habitation.

That this invasion is sudden and followed by rapid changes in the glands there can be no doubt. Murchison, as we know, found infiltration and swelling of the glands in the case of a patient dying on the second day of the disease, and other observers bear similar testimony.

The entire process affecting the gland, so far as the typhoid bacillus is concerned, from the time of invasion to death or disablement of the gland, is over in fourteen days—the normal duration of enteric fever from a pathological point of view. After this period, however, a new set of enemies appear on the scene in the shape of the suppurative micrococci, who, forming colonies on the injured or necrotic tissues around the glands, begin to generate their peculiar toxines, producing the special symptoms and temperature with which we are all familiar after the first fortnight of the disease; so that we may regard enteric fever as the result of the growth in the intestines of two sets of microörganisms. The so-called typhoid bacilli produce the symptoms during the first fortnight, and the suppurative micrococci the characteristic symptoms of its further stages. That other micrococci as well as these latter occasionally infect the patient from the intestinal canal there can be no doubt, and I have at present under my care in the Mater Misericordiæ Hospital a patient with a well-marked attack of erysipelas of the face in the fourth week of his enteric fever.

If recent bacteriological work has enabled us to grasp these facts with regard to the disease, we may ask ourselves what practical deductions are we to draw from them in regard to treatment. Looking at the disease as primarily a catarrhal inflammation of the intestines, and secondarily as one of septic poisoning, our treatment resolves itself into suitable diet and antiseptics. We know already how all-important is the treatment of enteric fever by bland and unirritating diet, such as will be absorbed mainly by the stomach and duodenum, and leave little to be dealt with by the lower part of the small intestine. The medicinal treatment of typhoid by antiseptics has lately received that attention which our more perfect knowledge of its bacterio-logical origin would demand, and we see occasionally in the medical journals glowing accounts of the success of this method of treatment in the hands of some, while others confess that it has not realized their expectations. So far as I myself am concerned, I have used this method of treatment for several years both in hospital and in private practice, and have every reason to be satisfied with the results.

I do not profess to believe that it will abort a case of typhoid once the characteristic fever has begun, but I do assert that it will prevent in the majority of cases the septicæmic phenomena, for it is nothing but septicæmia that we have to deal with after the second week of the fever is passed. The typhoid bacillus has by this time done its work so far as the intestinal glands are concerned, and hereafter we have only saprophytic bacteria and their effects to deal with. The characteristic oscillating type of temperature during the third and subsequent weeks of enteric fever, such as we have in connection with suppurating cavities in the lungs or elsewhere, shows this to be the case.

In seeking for a suitable antiseptic for this purpose, we must choose one which will fulfil the following objects: It must first exercise its effects in the intestinal canal, and not in the stomach. Its action must be thorough, disinfecting not alone the contents of the bowel, but permeating the intestinal wall as well, where septic micrococci may have already established themselves, or even have entered the blood. To fulfil these conditions, the form of antiseptic must be, in my opinion, a gaseous one. We know how readily the intestines absorb gases and pass them into the blood. The antiseptic I am in the habit of using is chlorine in an alkaline solution, as in this form it mingles best with the contents of the intestines, which in enteric fever exhibit a strongly alkaline reaction. This treatment is not new, for Murchison, who expresses himself as in general dissatisfied with antiseptics, speaks favorably of chlorine, and regards it as an admirable means of treatment. He administered it in an acid solution, which in my experience is not so satisfactory. That this treatment produces a fall in the temperature and makes the type of the disease milder, there can be no doubt, and in over a fourth of the cases, when begun early, it brings the febrile process to an end about the fourteenth or sixteenth day.

Murchison, in his careful statistics, found that only seven cases out of two hundred terminated on the fourteenth day by the ordinary method of treatment, so the cessation of the fever by this method of treatment in such a large percentage of cases must be more than a mere coincidence.

It is not claimed for chlorine that it is the best intestinal antiseptic, as more extended experience may enable us to procure a more convenient one; and I hope on some future occasion to bring before the Section the results of my experiments on this subject in conjunction with our bacteriologist at the Materia Misericordiæ Hospital.—*The Practitioner.*

Products of Friedländer's Pneumococcus — Percy F. Frankland, A. Stanley, and W. Frew, follow up (*Trans. of the Chemical Society*, 1891) Brieger's work on the substances formed in the cultivation of Friedländer's pneumococcus. Brieger found that on growing this microörganism in solutions of grape or cane sugar he obtained acetic acid with some formic acid and ethyl alcohol. The results of these further experiments are summarized as follows: 1. The pneumococcus of Friedländer sets up a fermentative process in suitable solutions of dextrose, cane sugar, milk sugar, maltose, raffinose, dextrin, and mannitol. 2. It does not ferment solutions of dulcitol or glycerol, and has thus the power, like the bacillus ethaceticus, of distinguishing between the isomers mannitol and dulcitol. 3. In the fermentation of dextrose and mannitol, the principal products are ethyl alcohol and acetic acid with a smaller proportion of formic acid and traces of a fixed acid—in all probability succinic acid. The gaseous products are carbonic anhydride and hydrogen. The authors give equations and opproximate molecular proportions.—*Brit. Med. Journal.*

Note on the Bronchitis of Influenza.—The great pandemic of 1889-90, by its sudden appearance and rapid extension at a time when influenza had almost become a forgotten disease, took the medical world by surprise as if it were a new and unheard-of occurrence. In spite, therefore, of the enormous abundance of material for observation, our ideas as to its etiology, pathology, and treatment only began to become clear after the first stress of the visitation was past. And although even now we are far from an exact knowledge of this important disease, we have at least obtained a number of valuable data concerning it, from which we may hope to proceed to its elucidation.

The only value of the following notes, derived from personal observation, lies in the fact that they indicate a certain uniformity in the phenomena presented by a series of patients of various ages and constitutional types, and allow us to form a fairly definite clinical picture of one variety of the affection.

A few general remarks may be permitted by way of introduction. It is generally agreed that, at least in Vienna, we have not had to do with a distinctively epidemic wave of influenza, but rather with a number of sporadic cases, a smouldering and scattered outbreak of the once virulent pandemic. Grave respiratory complications were likewise observed only in occasional instances, so that we may fairly describe the disease, up to the present at any rate, as sporadic and benign.

To deal first with the meteorological characters of the year 1890-91, a winter of keen frost and deep snow was followed by a cold rainy spring and a cloudy thunderous summer. The autumn and fall of the year were abnormally mild, with unusually little rainfall, but marked by dense fogs. Only towards the middle of December did rain and snow fall in any quantity, and it was then that a fairly numerous series of influenza cases were first reported.

Without giving entire adherence to the prevailing classification of the morbid types of influenza, we are probably justified in speaking of one of them as the catarrhal-gastric form. The cases here summarized were of this form, were nearly simultaneous, and followed a remarkable uniform course. The disorder began in all cases with a feeling of lassitude and depression, similar to that of coryza. No rigors were noted. The fever lasted from one to three days, and was not of much intensity. No instances of intense nervous prostration occurred. Generally speaking, the symptoms were not such as to cause special anxiety. The respiratory phenomena were, however, characteristic. All the patients complained of a sensation of dryness in the pharynx, with intensely irritating cough. The attacks began almost invariably with violent hawking, followed by a number of short, noisy coughs, often so intense as to suggest the paroxysms of whooping-cough. In spite of vehement efforts, the expectoration was either *nil* or consisted of small lumps of viscid white or yellowish mucus, mingled as a rule with a good deal of saliva. Auscultation revealed either mere harsh vesicular breathing or sonorous rhonchi: over the lower lobe on both sides scanty bubbling *râles* could be heard. One case, that of a man aged 53, is of special interest. He had suffered for years from chronic bronchitis of moderate intensity. The attacks, before the present illness, had always been accompanied by easy and somewhat copious expectoration, but on this occasion the bronchial affection took on the characters just described. It was this case which led us to regard the clinical variety we have set forth as a specific one, distinct from ordinary bronchitis—a specific influenzal bronchitis of mild type. It must be added that all the patients, after defervescence, or even *during the pyrexial period, complained of an intense feeling of* chilliness.

With reference to the digestive tract, loss of appetite and a tendency to constipation were usual, but they were not of long duration.

In the matter of therapeutics, the recent antipyretics exerted but little influence, while a more local treatment of the bronchitis, by warm mucilaginous drinks, inhalations of salt-water vapour, pumiline, and the like, procured at least alleviation of the symptoms. Of narcotics, codeine seemed to be of some value in doses of 0.3 to 0.6 grains *per diem.* In general, however, it must be admitted that remedies appeared to effect but little the dragging course of the disease.—*The Practitioner.*

Verbatim answers to the following questions in an examination before the Minnesota State Board of Medical Examiners.

Obstetrics.

1. Describe the stages of natural labor.
2. Give duties of attending physician in a case of normal parturition.
3. Give anatomy and physiology of the placenta.
4. What are the indications for the use of the forceps?
5. Give causes and treatment of post partum hæmorrhage.
6. What treatment would you adopt in puerperal eclampsia.
7. Describe steps in the performance of podalic version.
8. Give treatment for vomiting of pregnancy.
9. Describe steps of operation in making Cæsarian section.
10. Give treatment in mastitis.

ANSWERS.

1. Proper dilation of the os. Regular and stated labor pains. Head presentation.
2. Strict attention to all detail pretaining to the case.
3. A thick muscular substance enveloping the fetis containing the liquor or water. The body through which the fetis receives sustanance and life through the mother.
4. Forceps are seldom required. They may be required in obstruction of head passing through arch or in enlargement of the head or in some formes of malformations of the head.
5. In post-partum hæmorrhage give digitalis and tonics.
6. Had I a case of the kind I would send for another physician.
7. I would proceed as in turning and deliver by the feet.
8. Keep patient quiet. Give small pieces of ice to be slowly dissolved in the mouth and give fluid extract of black haw.
9. Make shure the case first is one that requires an operation of the kind to be made. Prepare antiseptic and proceed as per instructions laid down in the books.
10. In mastitis use fomentations and give tonics.

10, By another candidate:

Mastitis or inflammation of the mastoid cells occurs sometimes from pressure of delivery, from cold draughts of air soon afterwards and numerous other causes, foreign bodies in the ear, etc. If abscess follow it may break and perforated the onum permanateal but not always. It may work under the mastoid process and the temporal bone and discharge.

MISCELLANY.

THE MICHIGAN STATE MEDICAL SOCIETY announces that its twenty-seventh annual meeting will be held at Flint, on Thursday and Friday, May 5 and 6, 1892. The value of effective professional organization is too apparent to need further comment. The Society now has a membership of over five hundred, and its meetings are always well attended. Its scientific work is divided into three sections, in each of which papers of interest and value are presented. At each meeting there are also four annual addresses: The President's address, Dr. Geo. E. Ranney, Lansing; address of the Orator of the Section on Practice of Medicine, Dr. H. B. Baker, Lansing; address of the Orator of the Section on Surgery, Dr. C. B. Nancrede, Ann Arbor; address of the Orator of the Section on Obstetrics and Gynecology, Dr. A. W. Alvord, Battle Creek. Secretaries of Sections: Surgery, Dr. F. W. Mann, 250 Fort street, west, Detroit; Practice of Medicine, Dr. J. B. Bradley, Eaton Rapids; Obstetrics and Gynecology, Dr. A. W. Imrie, 439 Woodward avenue, Detroit. Titles of papers to be read must be in the hands of the General Secretary by April 15, or they cannot appear on the programme. Executive Committee: A. A. Thompson, Chairman, Flint; J. C. Willson, Flint; B. Cogshall, Flint; G. V. Chamberlain, Flint; L. N. Beagle, Flint. Geo. E. Ranney, M.D., President, Lansing. Chas. W. Hitchcock, M.D., General Secretary, 43 Henry street, Detroit.

THE FORTY-THIRD ANNUAL SESSION of the Medical Association of Georgia will meet in Columbus, Ga., on April 20, 21. 22. The officers are: President, G. W. Mulligan, M.D., of Atlanta, Ga.; Vice-Presidents, James M. Hull, M.D., of Augusta, Mark H. O'Daniel, M.D., of Macon; Treasurer, E. C. Goodrich, M.D., of Augusta; Secretary, Dan H. Howell, M.D., of Atlanta, Ga.

I LEAVE the State at once on account of ill-health, and all matters pertaining to the Iowa State Medical Society will be attended to by Dr. J. W. Cokenower, 523 West Walnut St., Des Moines, who has assumed the duties of Acting Secretary, and to whom all letters and exchanges should be sent.

Respectfully, C. F. DARNALL,
Sec. Iowa State Medical Society.
West Union, Ia., Feb. 22. 1892.

NEW GENITO-URINARY JOURNAL.—A monthly publication has been issued at Paris, called *Le Chirurgie Moderne des Organes Génito-urinaires.* It will be edited by Dr. J. Lavaux.

THE United States Supreme Court has lately decided that a court has not the right in a civil case to order a medical examination of a person against his or her will.

MORE than four thousand students are gathered at Ann Arbor, Michigan. Beyond a doubt this is the largest collection of students in one town in America.

THE Medical Society of the County of Kings, New York, has endorsed the Pan-American Medical Congress, and appointed the following committee to coöperate with its officers: Dr. J. H. Raymond, Chairman, and Drs. Alex. J. C. Skene and Alexander Hutchins.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from February 13, 1892, to February 19, 1892.

Capt. Walter W. R. Fisher, Asst. Surgeon U. S. A., leave of absence granted is extended fifteen days.

First Lieut. James D. Glennan, Asst. Surgeon U. S. A., leave of absence granted on surgeon's certificate of disability is extended fifteen days.

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ORIGINAL ARTICLES.

THE ESTABLISHMENT OF SANITARIA FOR PULMONARY DISEASES IN THE VICINITY OF OUR GREAT CITIES.

Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Massachusetts Medical Society, Suffolk District Medical Society, December 16, 1891.

BY VINCENT Y. BOWDITCH, M.D.,
ATTENDING PHYSICIAN TO THE CARNEY HOSPITAL, PHYSICIAN TO OUT-PATIENT DEPARTMENT AT THE BOSTON CITY HOSPITAL, INSTRUCTOR IN BOSTON POLYCLINIC.

The treatment of pulmonary diseases in sanitaria established for the purpose, has been for a number of years a well-recognized method in Europe, especially in Germany, and during the past few years, the foundation and success of institutions in various parts of the United States, shows that the hopes of those who originated the idea were not in vain, and that much more can be done now than heretofore in combating the ravages of consumption.

To Hermann Brehmer should be given the credit of having established the first institution of the sort, about thirty-two years ago, in Görbersdorf, a little village of Silesia, situated in a well-sheltered mountain valley about 1,600 feet above the level of the sea, where phthisis was never known to arise, and where Brehmer himself recovered his health.

He conceived the idea of establishing there an institution to be devoted to the treatment of pulmonary diseases only, and although ridiculed and maligned to an outrageous degree at first by members of his own profession, he finally proved that his views were correct, and his name and memory now are honored throughout Germany and elsewhere in the medical world.

Since then, and upon the same principle, the famous sanitarium at Falkenstein, in the Taunus Mountains near Frankfort-on-the-Main, was established under the care of Dettweiler, and later, many smaller institutions have sprung up in various parts of Germany, all devoted to the same purpose, and although varying perhaps in details of treatment, they carry out the same general idea that good food, fresh air, and strict supervision to prevent the results of indiscretion in diet and mode of life, are the chief factors in restoring the patients to health. Under these methods, both Brehmer and Dettweiler claim that 50 per cent. of the incipient cases of pulmonary disease have been cured.

It was my good fortune in the summer of 1889 to see both of the above-mentioned sanitaria, and I can testify to the great care and pains shown by those in charge of the institutions. Brehmer's sanitarium at Görbersdorf is a lasting monument to a noble man. Beginning as a small cottage for two or three patients, a little over thirty years ago, the institution now comprises two immense red-brick, Gothic buildings, with accommodations for 200 or more patients; a large winter-garden, reading-rooms, etc., in addition to various small villas scattered about the grounds for wealthier patients. Beautiful gardens surround the houses, and a magnificently wooded park, with carefully graded paths extending for many hundreds of acres over the sides of the mountains, forms a delightful pleasure-ground for the use of the patients.

In both of these institutions the strictest watch is kept over the general treatment of the patients, in regard to diet, amount and kind of exercise, and methods of life generally. At Görbersdorf, after a light and early breakfast consisting of a cup of tea, coffee or milk, with bread and butter, exercise in the open air is prescribed, and regulated according to the ability or disability of the patient. When the patient's strength admits of it, a walk up the mountain side through the park is advised. To facilitate this paths are laid out with the greatest care at a very gentle grade, seats being provided at many points, and the patients are told to stop and rest frequently to avoid undue fatigue, and at the same time to enable them to get the benefit of increased expansion of the chest and quickened circulation, so important in cases of pulmonary disease. Even in the height of winter is this made possible, as the paths are cleared of snow every morning by 8 o'clock, up to the top of the mountain.

About 11 o'clock a more substantial breakfast is served, dinner at two, and supper at about half-past six, the intervening time being occupied by exercise or rest in the open air, the patients even in the coldest weather, well wrapped up, reclining in chairs for hours during the day.

The moral welfare of the patients is cared for also, and frequent concerts, readings, games and other forms of amusement form an important feature of the treatment.

The same general methods are carried out at Falkenstein, and although the institution has not yet reached the magnificent condition of Görbersdorf, everything is done for the comfort and welfare of the patients.

It is a significant fact in favor of sanitarium treatment, that although the climate of Görbersdorf differs decidedly from that of Falkenstein, yet the favorable results are about the same in both places. In Görbersdorf they are blessed with infinitely more sunshine than in Falkenstein, which although situated at about the same altitude as Görbersdorf, and on the sheltered side of the mountain, has the characteristic wet, gloomy weather of a German winter.

Opinions differ at present as to the effects of altitudes *per se* in its beneficial effect upon pulmonary disease; some observers maintaining that is is one of the most, if not *the* most important factor in the large percentage of cases of recovery reported in regions over 1,500 feet above the level of the sea.

Brehmer himself remarked to me that he believed the altitude of Görbersdorf (about 1,600 feet above the level of the sea) had much to do with his success. Dettweiler, on the other hand, deemed it of much less consequence than other factors. Observers like Solly, Fisk and Denison, in Colorado, are firm in their belief that the altitude of Colorado (over 6,000 feet) is one of the chief reasons of the benefit obtained by the life there, while Dr. Geddings, of Aiken, S. C., whose large experience makes his opinion of much weight, is evidently of the same opinion as Dettweiler.

A discussion upon this point would be of great interest, but it is out of the limits of this paper, as I only wish to speak of the plan of establishing sanitaria for pulmonary diseases in the immediate vicinity of our great cities, in healthy localities, for the benefit of those who can not, or will not, for various reasons, seek more salubrious climates.

The late Dr. Paul Kretschmar, of Brooklyn, N. Y., two or three years before his death, read papers before the American Climatological Association, and before the local New York societies, strongly urging the establishment of such an institution in the hilly portion of New Jersey, near New York, but so far as I know, no active steps have been taken towards carrying out Dr. Kretschmar's excellent idea.

Very early in my practice I felt that some such institution was needed near Boston, and as the idea grew stronger, I was enabled, with the assistance of Dr. Lovett, to establish, through the generosity of wealthy people here and elsewhere, a small Sanitarium at Sharon, Mass., on the Providence railroad, a region long known as one of the most healthy localities about here, on account of its gravelly porous soil, its abundance of woodland, and pure water-supply, my idea being to supply to people of very limited means a comfortable home where at the same time a constant medical supervision could be maintained.

The institution was opened last February, and although it is, of course, much to early to give actual results, yet the evidences of the advantage over this method to that of sending patients hap-hazard out into the country to board, are so strong, that I am already convinced that I was not wrong in my first belief that a properly regulated sanitarium would be of the greatest use in our community.

A brief description of the sanitarium will be in place here.

The place selected was a small farm on high land not far from the Sharon station, overlooking a charming view towards the south and west. The soil is gravelly, very porous and dry, well-water not being found above twenty or thirty feet below the surface. Behind the house stretches from east to west a number of acres of woodland, chiefly of pine and hard-wood trees, which, with the line of the Moose hills, form an effective shelter from the harshest winter winds. On three sides of the house extends a broad piazza, in the centre of which, in a recess made on the southern front, the patients can be well protected, even in severely cold weather, when exercising or resting in the open air. The interior of the house is arranged to have as much sunshine and good ventilation as possible; open fireplaces are found in every room, and each patient has her own separate bedroom, no two ever sleeping in the same apartment. The walls are all painted, and are frequently wiped with damp cloths; the floors are of hard-wood covered with rugs, which are frequently cleansed, no laid carpets being allowed. The strictest rules are made as to the sputa of the patients. Cuspidors filled with damp sawdust are on the ground floor, and the contents are burned every day. In the bedrooms small paper cups in frames are at the bedside, [illegible] burned after use. When on the grounds the patients carry cloths placed in a rubber pouch in the pocket, the rags being destroyed in the same manner, and the patients are forbidden to expectorate on the grounds or to use any other receptacle than those provided, every effort being made to insure the utmost cleanliness.

The treatment usually pursued is first, that of giving all the good nourishing food possible at the three daily meals, a lunch of milk or raw eggs being taken in the middle of the forenoon and afternoon. According to the nature of the case, more or less exercise in the open air is taken, and daily rest in reclining chairs on the piazza, even in midwinter, when the sun shines, is one of the most important parts of the treatment, especially in hæmorrhagic cases, in which much active exercise either on rising or level ground, is prohibited.

In most cases, I have found the tri-weekly or daily use of the pneumatic cabinet to be of very marked benefit where expansion of the chest is needed, combining it oftentimes with some soothing vapor in cases where symptoms of bronchial irritation are marked. It is in such institutions that this instrument, or other methods for expanding the chest and inhaling medicated vapors, can be used with the most beneficial effect, for the patient has the advantage of being near at hand, and can easily take the treatment as often as thought necessary. Judging by the effect in most cases at the sanitarium I regard the pneumatic cabinet as one of the most valuable factors in the general treatment. Tonics are usually given; stimulants occasionally when necessary, but drugs are avoided as far as possible. Everything is done to contribute to the mental welfare of the patients, and drives through the country and both out-door and in-door games are encouraged.

The institution only receives women now, and only cases which are in the first stages of pulmonary disease. We hope, as the project grows, to have cottages built adjoining the present house and to receive both sexes.

The objection has been frequently raised by some, that the effect of putting many patients together is to increase the risks of possible infection, and that the effect upon the patient of seeing others ill about him, will be very depressing and hence deleterious.

That both of these objections have a certain amount of truth in them no one can deny, but that practically they amount to very little, to those who have had experience in sanitaria, I am convinced.

Before the Sharon Sanitarium was begun, I felt very strongly the force of the latter objection, and one of my first questions to Dr. Trudeau, when I visited his sanitarium at Saranac, N. Y., was, "Do not the patients become depressed by seeing each other ill?" In reply, he said, "Listen to that!" and at that moment the sound of some negro songs and very jolly laughter came from a group of patients on the piazza near by, and he added, "That is the way it is all the time. Of course, there are times when each one feels depressed, especially at first; but they usually become accustomed to their surroundings, and, if they improve, seem as happy as possible." This was quite in keeping with the sentiments expressed at the large institution at Görbersdorf, by a young American lady who had been there for two years, when I asked her if she never felt depressed at being in a place where there were so many sick people. She laughed and said, "Oh, for the first two weeks I came, I was homesick, and of course I felt depressed; but I soon got over that, and ceased to think of it, and I am so happy here now I hate to think of leaving, as Dr. Brehmer tells me I probably can in a few months"; and she told me that was the feeling with the majority. My own experience with the patients at Sharon only confirms this idea. They seem very happy; and when depression comes I usually find it attributable to some outside cause, and not to the proximity to other patients.

As to the possibility of infection; with proper care I think this danger is reduced to a minimum. No one would deny that the ideal way would be for each patient to have his or her own establishment, with a physician in constant attendance to regulate the daily mode of life in the most perfect climate to be found; but as this method is unfortunately impossible for the large majority of sufferers, a less expensive course must be adopted, and my own belief is that the advantages of the method of treatment I am advocating so far outweigh its possible dangers that the latter practically fade into insignificance.

Dr. S. E. Solly, of Colorado Springs, in an admirable paper entitled "Comparative Results of Treatment of Phthisis by Climate,"[1] gives the conclusions of several of the most celebrated authorities upon pulmonary diseases in Europe and America, and by them gives a very convincing proof of the great advantages of treatment in closed resorts (sanitaria) as compared with that in open resorts. In Table III, entitled "Comparison Between Open Resorts and Sanitariums in Low Climates," he gives the following striking figures:

	Cases.	Cured.	Benefited.
ALL STAGES OF THE DISEASE.			
Open Resorts in Low Climates	1,724%	6%	46%
Sanitariums in Low Climates	2,443%	13%	27⅓%
FIRST STAGES OF THE DISEASE.			
Open Resorts in Low Climates	685%	5%	45%
Sanitariums in Low Climates	89%	31½%	45%

In thus advocating the establishment of sanitaria in healthy towns near our large cities, I do not wish it to be understood that I expect such results as are obtained in climates more salubrious and less trying than our own; but I firmly believe, and am daily becoming more convinced from results thus far obtained at Sharon, that we can do infinitely more than heretofore to help a large class of patients who are unable for various reasons to seek other climates.

DISCUSSION.

Dr. Mason: I am sure that Dr. Bowditch's sanitarium will be of the greatest possible service, especially when its scope is increased through larger means, so that more patients can be taken, and when it can be made available for men. At present there is the greatest difficulty in Boston in having a male phthisical subject in the early stages taken care of for a long time. They come to our out-patient departments and wards for a few weeks, and then disappear. They are not able to pay a large amount of money for their support, therefore they generally go rapidly from bad to worse. The women have a better chance in small homes for that purpose. I do not think a large number recover in the small city establishments. I hope the time will not be long before Dr. Bowditch's sanitarium will be able to receive at least a few men such as present themselves every week at our hospitals and have to be turned away without much hope of benefit.

Dr. Osgood: One factor of Dr. Bowditch's sanitarium, which I am very glad has been opened, I wish to endorse strongly, and that is the separation of his patients. This plan recalls to me an interesting visit which I made ten or twelve years ago at the Hospital for Consumptives in Ventnor, Isle of Wight. For at this institution, consumption was treated upon what was called the "separate system." At the time this hospital was opened the bacillus of consumption, of course, was unknown, and undoubtedly the separate plan of treatment adopted resulted simply from the observation of physicians, namely: that consumption, if not contagious, presented a good many strange coincidences in cases where persons who took care of the consumptives themselves were attacked by the disease. However that may be, the Ventnor plan, so far as I know, was in advance of any treatment of consumption that is in general use to-day, and I would like to ask Dr. Bowditch if his sanitarium is not the only one in the country in which patients are treated on the separate system, which, of course, is the only one to be used in this disease.

Dr. Bowditch: I cannot say positively. I know of Dr. Trudeau's sanitarium at Saranac. He never has more than two patients in a room, and most of them have separate sleeping apartments.

Dr. Osgood: In the Ventnor hospital, by means of charitable donations, every patient, even the poorest, had his private room. I am quite able to sympathize with Dr. Bowditch's new project, because, being connected with the Home for Incurables, I am fairly pestered by people who demand entrance for consumptives into the Home. Our regulations refuse admission to such cases. It seems to me there is no question as to the great need of such retreats for consumptives among our poor. I hope Dr. Bowditch's sanitarium will become rapidly enlarged.

Dr. Knight: I think there can be no question in the mind of any one who has had to deal with pulmonary disease, tuberculosis particularly, that it is one that requires such constant care and supervision, that it can be afforded much better in an institution than out of it, it being not the disease which has to be treated at present, but the condition of the patient, and the factors are so many which have to be regarded in improving the condition of the patient, and enabling him to withstand the disease, and brings about its ultimate arrest, that it is only the most constant care which brings about, in the majority of cases, the successful result, and there is no question that the results are better in sanitaria than outside of them. Of course the sanitaria in health resorts like Colorado are going to show better results, as a rule. There are two in Colorado Springs, and it is fair to suppose that their results are going to be somewhat better at any rate, than sanitaria in our own neighborhood, but the constant care which they get in the sanitaria here is going to be productive of excellent results.

The first time that this subject was brought to my mind very forcibly, that hospital treatment was good for consumption, was when I was in Bellevue, temporarily serving with the elder Flint. He said one day: "Did you ever notice how well these consumptives do in the hospital, although our diet is poor, and you would suppose that, in the crowded condition of our wards, they would not do particularly well, but you notice how well they are doing, and they are not having any medicine. You see what the regulation of their life will do for them." This was true so far, that the majority of consumptives who came in, in all stages, improved from the judicious regulation of their diet and habits of life. Now it is perfectly well known that a patient will undo, in one day's overexercise, all that you have done for him in six months. That is not likely to happen in the sanitarium, neither are they likely to be upset in the thousand and one ways that their relatives and friends at home offer them. That is one advantage—being free from the constant meddling and annoyance of friends.

Then the association of patients with the same disease, curiously enough, leads them to feel very differently with regard to it. They talk over their symptoms, expectoration, consolidation and bacilli, just as we talk about matters of medicine, with no more feeling really than we have.

The other day, when I was at Sharon, I was asked to drive down to the station with an attractive young lady. She had been discharged at the end of a week's residence. She was supposed to have serious disease, but upon careful examination it was found that she did not have tubercular disease at all. I imagined she would rejoice at getting away from all those people, but on the other hand, she was mourning that she could not stay. She said it was a delightful place, and she would like to have stayed several months, so that the impression made on her mind in a week's time was only a pleasant one.

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[1] Hare's System of Therapeutics, Vol. I. H. C. Lea & Sons, Philadelphia.

Dr. Bowditch, in closing, stated the present capacity of his sanitarium was for nine women. Incipient cases were especially desired, since they offered better prospects of cure. It was not a hospital. All the patients were up and about, and able to take walks. They were not obliged to lie in bed unless something occurred which made it desirable to remain in bed for a day or two. There was no provision for free patients at present. The price of board for each patient was $5 per week.

KERATITIS BULLOSA.

Read before the Chicago Pathological Society, Feb. 8, 1892

BY J. ELLIOTT COLBURN, M.D.,

OF CHICAGO.

This exceedingly rare disease of the cornea I have met but twice in a private and dispensary practice extending over a period of more than ten years. Researches made for literature upon the subject yield scanty returns, as many other specialists appear to have been even less favored, and some of the articles are quite vague, and rather evince the idea that the writer has not personally come in contact with the disease.

Mr. O—— had been suffering for seven months from a recurring sensation of irritation in the lower lid, as he supposed, of the right eye. At night, it was only after firm pressure and much rubbing, that he was able to keep the lid closed, and frequently was not able to sleep on account of the irritation. Upon examination I found a small vesicle on the cornea, near its margin, which, on being punctured, discharged a minute quantity of clear fluid. These invasions were always attended by flushing of the head and face, considerable general disturbance and ocular neuralgia. At this time the patient was given a solution of zinc sulph., grains 2, aqua, ounce 1. Eight days later the vesicle had again filled, and the irritation had returned. I again opened the sac, thoroughly removing the pellicle, and made an application of a 4 per cent. solution of argentum nit.; it did not recur. I was unable to determine any disease or abnormality of the eye, or any cause for the growth.

My second case occurred during the past fall. Mrs. S—, aged 68 years, in delicate general health, atheromatous arteries, secretions scant, evidence of much physical suffering. She gave the following history: Twelve years before noticed that vision in right eye was below normal, and that it gradually became less, until there was only perception of light. About one year ago the eye became painful, tender and irritable, followed by the sensation of a foreign body under the upper lid. The eye felt full and protruding, the patient was unable to sleep, restless, and feverish. This condition was quickly followed by lowered sensation of the cornea, and sometimes a gush of tears would seem to give relief, and recovery quickly follow. These attacks occurred with great frequency. This condition not being benefited by the remedies exhibited, the case was referred to me nearly a year after the first invasion, when I found the following:

Left eye normal, but slightly flushed; right eye, conjunctiva much congested, lids closing spasmodically, excessive lachrymation, tension above normal, pupil slightly dilated, lens opaque and shrunken, iris tremulous. Towards the lower margin of the cornea, and extending upwards, there appeared a small elevation—clear as the cornea, but marking itself by a small point of light reflected from its apex. This elevation was found to be somewhat triangular in shape, with the apex near the centre of the cornea, and filled with a fluid which fluctuated by the pressure of the lids. The sac was punctured, and a small quantity of clear fluid flowed out. The tumor disappeared, and a solution of boracic acid was given, with sulph. cocaine to relieve the pain. The patient was directed to return as soon as the sac had refilled, which occurred on the fifth day. The pellicle was carefully removed, and the whole area cauterized by a careful application of carbolic acid. Eserine was also given to lower the tension, and the cocaine to relieve the pain. On the seventh day the sac had again filled; it was again removed, and the exposed surface cauterized, this time with argentum nit., 20 grains to the ounce. I then tried galvano-cautery, actual-cautery, etc., but without any permanent results. The left eye was becoming more irritated, and tender; photophobia, excessive lachrymation and cloudiness of the cornea persisting after the attack had subsided in the right eye, led me to fear that the irritation in the right eye was threatening to excite sympathetic disease in the left. I then advised enucleation, and, upon consultation Dr. Holmes concurred with me in this matter. Dr. Patton administered the ether, and assisted by Dr. Stannard, I enucleated the eye. By repeatedly instilling cocaine prior to the operation, we were enabled to remove the eye with but slight etherization. The wound healed by first intention. The left eye, which had been very irritable and painful, became normal, and the vision improved.

CASES OF PEMPHIGUS CORNEA.

These cases so closely resemble in physical appearance the preceding, that I have given three out of eight cases which have come under my observation.

Case 1.—C. S——, aged eleven years, complained of blurring vision in right eye; no pain except at night or when he attempted to close the lids. Upon examination a small vesicle was found over the centre of the cornea, about one line in diameter. In attempting to rupture it by pressure upon the lid it was extended three times its former diameter. As I saw this case before the days of cocaine, I applied a pressure bandage and directed the patient to return on the second day, when I found no trace of vesicle, and no opacity. It did not recur.

Case 2.—Mrs. A——, aged 31 years, teacher, was injured in the right eye by a paper wad. Had experienced no irritation except for ten or fifteen minutes immediately following the injury. I saw her upon the fourth day after the injury, and found a small vesicle just below the centre of the cornea. There was no corneal injection, or other symptoms of irritation. I advised the use of pressure bandage at night, and upon her return on the following day, I found no trace of the previous trouble.

Case 3.—Mr. T——, of Kansas, aged 42 years, a few days before leaving home noticed a slight irritation in one eye following a ride in drifting sand; had been free from annoyance after the night following the ride until four days later, when he found he could not see well, and experienced a sensation of a foreign body in the lower lid. Upon examination I found a small vesicle near the limbus of the cornea;

applied cocaine, and punctured. The following day could find no trace of the trouble.

A careful examination of the meagre literature up on this subject, both in the text-books and reports of cases, would seem to indicate that there are two forms of vesicles—one which can be, with perfect propriety, classed as a keratitis bullosa—accompanied by inflammatory symptoms; the other a simple pemphigus, free from any manifestation of irritation other than that incident to the friction of the lids over the vesicle.

Keratitis bullosa, or inflammatory vesicle, occurs in eyes suffering from lowered nutrition, most frequently inter-curring with glaucoma, chronic iritis, irido-cyclitis,or chronic non-suppurative pan-ophthalmitis. The first symptoms are peri-corneal flushing, photophobia, sharp pain followed, in a few hours, by the sensation of a foreign body in the eye, which is aggravated by every movement of the lids and attempts to close the eye. Accompanying these symptoms there may be supra-orbital pain, and tenderness over the frontal region, and great general disturbance. After a few hours, the tension of the globe becomes markedly increased, the pain lessens and the cornea becomes more or less insensible to the movement of the lids or to the touch. The rupture of the capsule occurs spontaneously from the pressure of the lids and the rubbing of the fingers. In the interval which now occurs between the formation of the second bulla, there is a return of sensation, slight photophobia, lower tension—even to much below normal, the margin of the bulla is outlined by a slight elevation fringed by the ragged and shrunken walls of the ruptured vesicle. When the vesicle is preparing to return promptly, before there has been complete repair extending over the area covered by the bulla, it will be frequently observed that the centre gives an opalescent reflection. This occurs before there has been sufficient time to cover the space with normal epithelium, or obliterate the ragged edges of the vesicle.

According to Schmidt Rimpler, the contents of the vesicle may at times be tinted with blood, but from my observation this takes place in very chronic cases where there has been much vascularity of the cornea in the region of the vesicle, and I am not sure that the tinting with blood is not due to the rupture of vessels in the pellicle.

Arlt says that "The walls of the vesicle do not consist, as was formerly believed, of Bowman's membrane and the epithelial layer, nor of the latter alone, but of a new layer of tissue inserted between the two, and of proliferating cells." This condition would seem to explain the apparently firm boundary of the vesicle, and the impossibility of dissecting up the cornea, by pressure and manipulation. Each new vesicle is an independent structure, for there is scarcely time in the interval, for the renewal of the epithelial layer already destroyed.

Pemphigus Cornea.—A non-inflammatory vesicle of the cornea, seldom multiple, nor occurring during any eruption or neuralgic disturbance of the head or face.

This form of vesicle is more frequent than the inflammatory, and may occur at any age, and may or may not be coincident with other ocular diseases. The vesicles occur centrally more frequently than at the periphery of the cornea, and frequently fill with great rapidity. There is no pain or irritation, unless the vesicle is pressed upon by the lid, and no pericorneal flushing. The base of the vesicle is oval or round, and pressure upon it, made by traction with the finger upon the lid, will extend the vesicle in the direction of the pressure, even to the dissecting of the cornea to its border.

The capsule once ruptured, never refills, but a greyish opacity covers its base, which rapidly disappears by the replacement of the epithelial layer. There remains no opacity, or change of curvature of the cornea. In some cases the vesicles do not rupture, but become more and more attenuated, until they finally disappear.

The causes of the formation of these bullæ are not always clear, but in my experience they have been the results of slight, non-penetrating injuries to the cornea, resulting in a separation of the epithelial layer. A close examination of the contents have never revealed any encysted foreign particle.

The treatment of keratitis bullosa, aside from enucleation or abscission, has not met with brilliant results. Hasner reports a case of cure following a superficial excision of the portion of the cornea involved. Mittendorf suggests quinine, and anti-malarial remedies, but casually remarks that these have never cured.

Iridectomy and paracentesis cornea have been tried without benefit. In my case we tried cautery with carbolic acid, 95 per cent., argentum nit., 4 per cent.; galvano and thermo-cautery, and curetting, without permanently good results.

In view of the reports of cured cases, even though the differential diagnosis may not have been carefully made, it would seem advisable to try any or all of the means of cure suggested, especially if the vision of the fellow eye is below normal, and is liable to further degeneration. If the patients are weak and debilitated from disease or age, it would seem best to state the case fairly, and allow them to determine whether they will submit to further attempts to cure with the possibility of failure, or at once submit to enucleation. The possible influence of the constantly recurring irritation of the affected eye on its fellow, must not be overlooked, and vigilant watch kept for any symptom pointing to sympathetic disease. Cocaine and eserine may be used for local relief. In the treatment of simple vesicle or pemphigus cornea I have had good results from ordinary pressure bandages, but lately have used cocaine, and punctured the sac with a fine point. I have found no other treatment required in the eight cases, three of which I append in my report.

DISCUSSION.

Dr. J. M. Patton: Mr. President, I had the opportunity of examining the eye, and I saw the operation in this case, and the appearance of the vesicle resembled so much that of the pemphigus form that I have seen, that it seems to me it would be very difficult for a person to make a differential diagnosis, and that we might readily get into difficulty by waiting too long trying to do something with that form before the general practitioner would recognize the fact that he had anything else but a pemphigus vesicle to deal with. The case which I saw was probably a well marked one, and the operation was skilfully and quickly done by Dr. Colburn—necessarily so, because the lady was quite old and feeble; she had organic disease of the heart muscle and valves, and it was a question as to whether she would be able to take an anæsthetic. Certainly it would not be safe to have given her chloroform, and probably not safe to have given ether to full anæsthesia. The case illustrated the fact that such operations may be nicely done by a moderate amount of anæsthesia combined with the use of cocaine locally. She took a small quantity of ether to the first stage of etherization; it did not reach the disturbing period at all. She felt no pain, and the operation was done without any trouble whatever. It could not have been done so quickly and efficiently with either of the anæsthetics alone, or by the single use of cocaine.

I would like to ask Dr. Colburn if there are any distinguishing features to differentiate these two forms that he would lay special stress on?

Dr. Colburn: I endeavored to point out the two forms of the disease in the differential diagnosis. In the simple vesicle or pemphigus we have no inflammatory symptoms, excepting those incident to the irritation of the lid in moving over the vesicle. In keratitis bullosa we have the inflammatory symptoms preceding and following the formation of the vesicle. And then, furthermore, in keratitis bullosa the vesicle occurs almost invariably in eyes that have been previously diseased, and in those in which there has been marked interference with the nutrition. In the case which I first mentioned, it would be almost problematical whether the condition was related to keratitis bullosa or pemphigus cornea were it not that it had persisted for so long a time; from the fact that there had been a constant irritation for a period preceding the formation of the vesicle, during its development, and after it had emptied, it would point to its being what we know as a keratitis bullosa. Then there is the period of anæsthesia that occurs for a short time after the vesicle is thoroughly filled, and very frequently in these cases, so far as I can find from the literature of the subject, there is increased tension of the eye. In pemphigus cornea I have not seen a single case of recurrence of the disease. Another point of difference is that in simple vesicle you can by pressure through the lid extend the vesicle in any direction. In keratitis bullosa you cannot so extend it; it is perfectly rigid. The vesicle will rupture after firm pressure, but will not extend beyond its primary limits. In this case, I think that the constant attempts to remove the vesicle increased the irritable condition of the eye and tended to produce sympathetic irritation in the other eye. Whether there was any sympathetic inflammation excited, I do not know. That could only be told by following the case for some time.

Dr. Patton: You would lay stress on the history or absence of continued irritation in the eye, would you not?

Dr. Colburn: Yes. If I were convinced that the patient had a recurrent vesicle, and that this was but one of many, I should call it keratitis bullosa if the case hac the other symptoms of inflammatory invasion.

Dr. Geo. H. Cleveland: I would like to ask Dr. Colburn what connection there is between these troubles and a simple ulcer of the cornea? Or whether a simple ulcer of the cornea may result from these affections? In a simple inflammation, involving corneal layers with destruction of the layers, would perforation occur if the case continued? Furthermore, what is the exact pathology of this trouble (keratitis bullosa)? Have microscopical examinations been made in reference to a specific organism? If so, what effect would the stronger antiseptics have in the treatment of both affections?

Dr. Colburn: To the query, whether they would produce ulcer of the cornea, I would say this, that, I presume, if any of those vesicles were ruptured in an eye that contained any of the pus-producing microörganisms, you might get an ulcer following; but there must necessarily be some infection, and the first form is pretty well guarded from infection, because it is evident from the investigations of Arlt that it has an epithelial lining membrane, and that would rather protect it from inoculation. In the case of pemphigus cornea, where there are simply vesicles to break down, I presume that, if under proper conditions they were infected, an ulcer would be produced. I do not see why they should not be subject to infection as well as when a foreign body punctures the epithelial layer. The tears are so well provided with the power of destroying, washing out and keeping clean the conjunctival sac, that it seldom is infected. If the nasal duct and lachrymal sac are inhabited by organisms, I have no doubt they might extend and produce trouble.

Regarding the true pathology, I think very little definite of the first form is known. The examinations made by Arlt would seem to indicate that there is a new formation between the epithelial layer and Bowman's membrane, and that it is speedily reproduced. It will take four or five days for the new epithelium to extend over the denuded area, yet bullæ will appear within eight days from the time one has been destroyed. I do not think there is any microörganism entering into the cause of its formation.

Dr. J. J. M. Angear: Charcot has taught us that certain ulcers follow disease of the spinal cord. Pathologists agree, I think, that herpes is the result of nerve irritation; that we have ulcers of the eye from the destruction of the optical branch of the fifth pair of nerves. I have listened to the paper attentively, and I thought if there was anything pertaining to the nervous system that was the real cause of these ulcers; or whether pathologists have thrown out the least intimation with reference to this affection being a nerve trouble.

Dr. Colburn: I purposely avoided the discussion of herpes, as it comes under an entirely different head. So far as I have been able to learn there is no relation between the nerve irritation and the formation of these vesicles; there may be indirectly in the simple vesicle. There you have a separation from the impinging of some foreign body on the cornea—a separation of the epithelial layer from its basement membrane, which may be due to paralysis of the terminal nerve supply. It is purely local, however, and it is simply the terminals that are so affected. Enucleation should be a last resort or in cases where the constant irritation is exhausting the patient or threatening the fellow eye with sympathetic disease.

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FOUR CASES OF ORBITAL TRAUMATISM

RESULTING IN IMMEDIATE MONOCULAR BLINDNESS THROUGH FRACTURE INTO FORAMEN OPTICUM. IN ONE OF THESE CASES THE BLOW WAS OVER THE LEFT ORBIT CAUSING BLINDING OF THE RIGHT EYE.

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The ancients as far back as Hippocrates, were aware that blows on eyebrows or skull were followed at times by immediate monocular blindness.

Hippocrates wrote that amaurosis sometimes follows wounds inflicted on eyebrows or other parts of head.

During the past hundred years medical writers alluded to the possibility of sudden blindness following injuries of the skull. The etiology was in doubt: Beer's theory being most in vogue, viz.: that the injury to the supra orbital nerve caused the blindness; to this, later writers added the infra orbital nerve as a probable cause. Lawrence[1] gives in his book four cases in detail, and remarks that although the fact appeared to be well established, no one furnished the history of any cases, referring especially to Beer and Wardrop, both of whom had written on this subject. Since Lawrence's time there has been no lack of recorded cases, but it remained for R. Berlin to establish on a sound basis the true pathology. At the twelfth meeting of the German Ophthalmologists in Heidelburg in 1879, Berlin, besides reporting three of his own cases, gave an analysis of Von Holder's very carefully made autopsies in 126 cases of skull fracture. Von Holder for thirty-three years filled a position, corresponding to a medical coroner. In eighty-eight of the 126 cases the fracture involved the base of the skull, and in eighty the orbital roof was likewise fractured, making 90 per cent. In fifty-four cases, or 60 per cent., the lesion extended into the foramen opticum.

Unfortunately, these cases had no clinical data, but at the same time they established beyond doubt the frequency with which the optic canal was involved. In forty-two of the 126 cases, the injury was due to gunshot wound through mouth or temples, and in eleven, falling on the head, while only one, where the skull was run over.

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[1] Diseases of the Eye, London, 1883, p. 128.

In the cases where death does not result from the injury, the patient is stunned or dizzy, may suffer from shock, bleeds from ear, mouth or nose, and soon discovers that one eye is blind. There may be œdema of the eyelids, eye is diverged and protruded, pupil enlarged and irresponsive to direct rays of light. Ophthalmoscopic examination immediately after injury is, as a rule, negative, but within two weeks, at the very utmost, pallor of the optic nerve is noticeable, and often much sooner; some regain enough vision to count fingers at some feet, the eye remains divergent, with enlarged pupil. Optic nerve atrophic.

The explanation of the fracture involving the foramen opticum is as follows—as it appears to me :

The frontal bone unites with the nasal, submaxillary, lachrymal, and ethnoid bones by a continuous line of sutures, until the lesser wing of the sphenoid is reached, and at this point, the suture line bifurcates forming an obtuse angle, and quite near the apex of the angle is the foramen opticum. The jar made by the blow would find its weak point along this line of sutures, and the first resistance would be at the bifurcation adjacent to the foramen opticum. The movement or jar could not follow both lines with equal force at and beyond the bifurcation, consequently the unequal strain would result in fracture of the bone into the foramen opticum, causing compression of the optic nerve and sudden loss of vision in the eye.

G. F. S., age 23, artist, was brought to me March 3, 1890, while suffering from shock. From his companions I learned that while fencing with a friend, a thrust of the friend's foil had broken through Mr. S.'s mask, and the buttoned point entered the right orbit between the nose and the eyeball. I saw him forty minutes after the accident, and then the right globe was somewhat protruded down and outward. Chemosis and eschymosis of lower ocular conjunction with a slight irregular tear over the body of the right internal rectus muscle. Eyeball immobile, pupil dilated almost ad. maximum, and not responsive to direct rays of light, but acted consensually with the fellow eye. Total loss of light perception of that eye. Ophthalmoscope showed a slight haze of fundus, but not enough to prevent a good view of optic nerve and media. At the end of the first week after the injury the protrusion and displacement of the globe had disappeared, the eye diverged and patient could control all the ocular muscles except the rectus internum, chemosis still remaining. Ophthalmoscope showed arteries and veins normal in size, with no haziness of media. On the tenth day for the first time patient had light perception on nasal side, pupil moderately dilated and somewhat responsive to direct rays of light. At the end of the third week there was well marked begining atrophy of the optic nerve.

The patient has been under my observation ever since the accident; well marked atrophy ensued, but he still retains a small sector of the nasal field, where there is slight perception. Pupil larger than in the fellow eye, and responds fully to direct rays of light. Slight amount of divergence of eyeball, but patient can bring the cornea well on toward the inner canthus.

Ludwig M., aged 24. Was admitted to my service the New York Eye and Ear Infirmary, April 1, 1891. He complained about the blindness of his right eye, giving the following history: At 1 A.M. of the day of admission to the infirmary he was waylaid by a rival and struck over the left eye; with regard to what he was hit with, he does not know, but thinks it was only the fist. For a moment he was stunned and dizzy, but did not fall nor become unconscious, and was led home by the young woman who was the cause of the assault. From the moment of the blow over the left eye he is positive that the right eye became blind. He bled from the nose and vomited blood, which must have been previously swallowed, and suffered from shock. When I saw him fifteen hours after the injury, there was slight abrasion of the skin of upper left eyelid, extending toward the nose, with some œdema of both upper and lower eyelids; movement of the left eye normal; ophthalmoscopic examination showed *hyperopic astigmatism (O.D.+ 1.00 cyl. 90 $\frac{20}{20}$).*

Right eye totally blind. Movements of the globe normal, no divergence nor protrusion; some conjunctival injection; pupil widely dilated and only responded consensually to light. Ophthalmoscopic examination gave normal fundus. Seventy-two hours after injury ptosis marked, and in ninety-six hours ophthalmoplegic. One week after his admission to the infirmary the optic nerve of the right eye began to grow pale and in three weeks the atrophy was marked. April 15, 1891, two weeks after the injury to his left eye, the right eye began to have some light perception in the upper nasal field, and he could now move eyeball to a very limited extent. Ptosis not so marked. May 11, 1891, six weeks after injury, the movement of eyelid and globe had greatly improved, but there was still slight divergence, pupil not so dilated. Can form a fair estimate of large objects when held about eighteen inches, in the upper nasal field. The atrophy of the optic nerve has increased with the disappearance of the capillaries and total pallor of disc. Since then patient has been lost sight of, and all my efforts to find him have been, so far, unsuccessful.

M. H., 34. I saw patient Oct. 3, 1891, for the first time, when I elicited the following history. He was struck on morning of Sept. 20, 1891, over the left orbital ridge with a lighted lamp, thrown at him by a boon companion. As well as he could estimate, the lamp was thrown a distance of ten feet; the blow dazed him, and he staggered back against a wall of the room, which prevented his falling. He felt slightly dizzy, but had no nausea or other symptoms of shock. In less than one half hour he was asleep. He awakened at 8 A.M. the same day, having slept soundly for six hours, and discovered that his left eye was blind. Patient immediately consulted Dr. Henry Moffat, of Yonkers, N. Y., who found an irregular wound of 1½ inches long extending up and backward from under edge of left eyebrow, likewise a slight abrasion of skin on inner half of upper eyelid. Marked œdema of both upper and lower eyelids, but not much displacement of eyeball, pupil moderately dilated, with total loss of light perception of left eye.

Dr. Moffat saw patient again on the fourth day after injury, when he found the general appearance of the parts much worse. The œdema had increased and the lower eyelid was everted and very much swollen, with chemosis of eyeball. The eyeball was slightly displaced down and outward. I saw the patient on the 2nd of October (he having been referred to me by Dr. Moffat); œdema of lids had disappeared, eye slightly deranged, with some redness of conjunctiva, pupil moderately dilated which did not respond to direct rays of light, but acted consensually with the fellow eye. Ophthalmoscopic examination showed some pallor of optic nerve of left—but fundus otherwise normal. Vision nil. Right normal in every respect.

Dec. 5th, 1891. Patient presented himself, after an absence of three weeks, when I found the divergence not so marked as on the previous visit, pupil moderately dilated, but there was enough vision regained for the patient to count my fingers at eight feet. Ophthalmoscopic examination showed more marked pallor of optic; nerve fundus otherwise normal. *Dec. 27, 1891, condition remains the same. Jan. 17,* 1892. Still able to count my fingers when held about eight feet from his left eye, but the ophthalmoscope showed the atrophy of optic nerve more marked.

Julius S., aged 30. Patient fell from the track of the Metropolitan Elevated Railroad, on the afternoon of the 9th of October, 1891. He was conveyed to St. Vincent's Hospital, when on examination by the House Surgeon, Dr. Shea, there was found blood coming from right ear and nose, left side of head and face contused, with wound of left orbital ridge and patient in a semi-unconscious condition. On the third day after the fall of patient from the track I saw him; he lay in a stupor and when aroused he complained of great pain all over his head. In falling he tried to save his face, so that he struck on the left side of his head. He complained about his left eye, saying that since the accident it had become blind. There was no swelling of the eyelids, the eyeball was slightly diverged, but he could move the cornea well in toward the inner canthus, no protrusion of the globe, pupil slightly enlarged, but it did not respond to direct rays of light, but acted feebly consensually with that of right eye. Ophthalmoscopic examination showed the fundus of left eye normal. No light perception. Right eye normal in all respects, except the pupil was rather contracted. Saw patient at regular intervals and at the end of two weeks there was found by the ophthalmoscopic examination, decided pallor of of optic nerve (left eye). Patient continues under my observation, and now, Feb. 1892, optic nerve atrophy pronounced of left eye. No light perception.

The medico-legal aspect of this lesion is quite apparent and is of considerable importance.

I am fully satisfied that the optic foramina are frequently involved in fractures of the skull, but as most of the severe cases die, this lesion is neither looked for nor recognized. If the autopsy is not carefully made, by removing all the dura mater within the cranial cavity, and this means hard work, a fissure involving the optic foramen easily escapes attention. It has been my lot to see the four cases which comprise this paper within the past two years, which is remarkable from the fact that there are not more than 80 recorded cases in medical literature.

A twenty-five per cent. ointment of resorcin in vaseline is recommended in the treatment of rodent ulcer.

A CASE OF MALIGNANT PUSTULE.

Reported to the Buncombe Co. Medical Society, Feb. 1, 1892.

BY KARL VON RUCK, B.S., M.D.,
OF ASHEVILLE, N. C.

That comparatively rare affections may come to our notice when least expected we all have learned from experience, and it is certainly one of the last of improbable cases that I should have imagined to present itself to me, the more so, as I am not engaged in general practice.

Nevertheless, on Dec. 8th, a patient who has been under my care more or less for the last three years, on account of his pulmonary affection, called upon me with the following statement: on noon of the day before, he noticed a spot on the inner aspect of the first phalanx of the fore-finger of his left hand, looking like a flea bite, which attracted his attention on account of severe itching; by evening a vesicle had *formed surrounded by a red areola, and a burning,* stinging sensation was also present; the finger and surrounding parts had become slightly swollen.

The patient presented himself the following morning, calling my attention to his finger. The vesicle was now about three-eighths of an inch in diameter, the elevated epidermis was of a dark discoloration and gangrenous, the base was indurated, and spontaneous rupture of the vesicle had occurred, a serous, pink-colored fluid discharging, so that a drop could be collected every five or ten minutes.

The first phalanx of the finger, the phalango-meta-carpal joint, and the hand were distinctly swollen, the skin presenting a red blush, the vesicle had a stinging, burning sensation, the whole hand to the wrist pained him, the local temperature of the hand was distinctly increased to the touch; there were, however, no general symptoms, unless a temperature of 99.5° F., could be so interpreted.

The patient was in my office from 9:30 to 1 o'clock, and the swelling and size of the vesicle had undoubtedly increased; a very minute vesicle, independent of the larger one, which was not present in the morning, was now observed at the edge of the indurated base. Eight years ago, in the Hygienic Institute in Berlin, I saw experimental inoculations of guinea pigs and rabbits with anthrax bacilli, and within the last few months, I had reviewed the subject of anthrax in connection with some bacteriological studies—but for these circumstances, I should perhaps have had no suspicion of the serious character of the nature of this case.

From what I remembered, the probability of malignant pustule at once occurred to me, and my inquiries only served to strengthen the suspicions, while the local appearance and the history given by the patient conformed entirely to descriptions of my available, and promptly consulted medical literature.

I suggested the propriety of consultation, which was readily concurred in by the patient, in the meanwhile subjecting the discharging serum to microscopical examination, with, however, negative results. While my consultant could not be more positive than I was myself, it was determined to endeavor to make a culture from the discharging serum, and to promptly and thoroughly destroy the vesicle and its base with fuming nitric acid. This was done accordingly, and the patient allowed to return home with instructions to return or send for us, should general symptoms, which were explained to him, occur.

Before the application of the nitric acid, two large drops of the discharging serum were collected upon sterilized slides and put into a moist brood-oven as hanging drops, with a temperature of 100° F.

In three hours one specimen was removed and examined, and the characteristic growth of the anthrax bacillus left no further doubt of the diagnosis. The bacilli were present in various stages and phases of development, some grown out to long rods, others shorter, and in some upon the periphery, where in the brood-oven the drop had slightly dried, the rods were quite short; subsequent experiments with the specimens gave similar results.

The patient returned the following morning; the swelling had greatly subsided, a dry eschar having formed where the acid had been applied. Nothing further occurred, the swelling had all disappeared by the second day and healing resulted promptly.

There is, gentlemen, no reasonable doubt, that this case was one of anthrax, but much obscurity and doubt exists, as to how and where the infection occurred. I am not aware of the disease prevailing in this locality among cattle.

The patient had recently been engaged in handling and buying cattle and the same day and the day before the pustule appeared on his finger, he had also cleaned out with his hands, the mangers in his cattle barn. He also stated that one of his horses had an ugly sore on his head where the bridle comes in contact, and he had handled the sore and the bridle.

None of his cattle died before[1] or have become sick since, and, altogether, the origin of the pustule remains more or less a mystery.

The lesson we can all learn from this case is, as I stated in the beginning, that although living in a small community, we may at any time, be confronted with unexpected and infrequent affections, possibly of the gravest character, which, if upon them we are indifferently or not at all informed, may possibly terminate fatally, before we can be set right in our diagnosis.

It teaches us the necessity of frequent reviews of subjects, which have apparently had only general interest in our previous study, and also the great importance of familiarity with microscopical and bacteriological investigations.

ALCOHOLISM A DISEASE.

BY A. ENFIELD, M.D.,

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The day of medical theories, which do not have established facts to justify them, belongs to the past. It has taken ages of observation and investigation, by the greatest intellects of the profession, to elevate the science of medicine to the high position it now occupies. We live in an age of light and knowledge, an age in which old isms, theories and fallacies, are fast disappearing before the sweeping progress of this century.

The past decade has given us the beginning of a new epoch in the science of life. Medical science is now called upon to defend our bodies from the parasites which prey upon us from without, and physiological and chemical research has taught us the therapeutic application of drugs in the cure of dipsomania and kindred diseases.

The power of self-regeneration is one of the great distinctive properties belonging to all organized living bodies; but the moment we commence to live we begin to die. Molecular changes may be increased or retarded by various foods and drugs, taken into the system at stated periods. We apply the term hunger to that peculiar want felt by the human system for food, a sensation (when not too prolonged) by no means disagreeable, and one which is often excited by the sight or smell of a savory dish.

It is true that the taking of food is influenced in some degree by exercise and habit, as well as by the sense of hunger, and if our systems are not supplied at regular intervals by this nourishment, the sensation of hunger becomes so great that we suffer great pain and distress.

All the elements necessary to nutrition (except oxygen and light) can be taken into the system by the mouth, and if it were not that there comes a time in the history of every organized body, when the tissues fail to appropriate sufficient new material to repair the waste, we would continue to live forever. Death is therefore a physiological necessity. Therefore, there is no such a thing as true euthanasia. But it is the duty of the physician to secure for man such good health as shall bear him, in activity and happiness, onward in his course to the goal. Good health and happiness can be secured by living in obedience to the laws of health. When the medical profession succeed in teaching the world how to live in a proximate physiological, normal condition, then they have reached the consummation of their calling.

Fifty years ago there was not a medical college, in Europe or America, that had a special chair of neurology, whereas to-day there is not a school that has not at least one such chair, and some schools have two, or even three professors who are giving their whole time and attention to discoveries and advancements in this important branch of medical science.

It is therefore gratifying to the American student of scientific medicine to note the amazing progress that has recently been made in the discovery and cure of nervous diseases, especially by American neurologists.

It was our own beloved Rush who a century ago stood as the great pioneer (in advance of all the world), to describe and clearly demonstrate the future of this branch of medical science. It was men like Rush, Pinel, Brown-Séquard and others, who taught us that insanity is a disease, and not the devil in man, as was generally supposed prior to their time So that to day, while medicine is advancing all along the line, in no other department has there been such advancement as in the discovery and treatment of nervous diseases. Advancement has been so rapid in this special department of medicine, that some writers claim that all diseased manifestations are but the result of nervous shock.

Vesalius took his own life in his hands when he was brave enough to sharpen his scalpel for the first dissection on the human body. Galen followed, and taught us that the arteries contained blood and not air, and Harvey showed us how that blood circulated. Jenner, Pasteur and Koch have been bold enough to transfuse the very elements of chemistry into our blood, in order to kill the myriads of germs that infest our organisms, and produce disease and death.

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[1] It has since come to my knowledge, that a cow died suddenly in his herd a month or two before the occurrence of this case

By the aid of physiology and chemistry, we have used the elements around us to cure disease and prolong life. The great labors of the past are but now beginning to bear their fruits. Alcoholic neuritis is no longer considered a habit, but a disease; as much so, indeed, as insanity.

The old fogy element of the profession may cry out against this new departure in the treatment of a disease; but it cannot stem the tide of scientific progress when the world can see the results and witness the benefits to mankind. The *secum lumen*, the great light, will open the eyes (the old fogies), as the noon-day sun opened the eyes of the scoffers of Jenner. If one poor soul can be saved, who dare cry against the cure of a disease that cuts down youth in his vigor, manhood in his glory and strength, and age in his weakness; a disease that has produced more misery, sickness and death, than all other diseases combined?

It is an insult to medical science to say that all the brave and good men who have killed themselves with alcohol and opium did so just from habit. Tell me that all the men of genius whose lives have been wrecked and ruined by these drugs were led to their use by mere accident? Impossible. These men fought like heroes against their disease; and for these diseases they are not responsible.

The day has come, in the fulness of time, when we can say that this disease, that has destroyed so many, shall destroy no more. Thousands of human beings are being rescued from the destroying influence of these diseases, and thousands and tens of thousands are yet to be saved from an untimely death.

Every new advancement in the science of medicine is met with a storm of opposition. Dipsomania must be recognized as a disease, and not as a habit. Until recently, the medical profession have neglected to examine this subject carefully from a physical point of view. They must examine this subject as they examine any other ailment, if they wish to reach a satisfactory conclusion.

It is not the intention of this article to begin a controversy with those who honestly believe that inebriety is the result of habit alone. Inebriety is no more due to habit, vice and sin, than is insanity. If inebriety is a disease, then its cure rests with the physician; if it is wholly a sin, and man is entirely responsible for his appetite, then his treatment and salvation must come from those who claim it is a habit.

A Christian will be a better, a brighter and a happier Christian, if we can remove this appetite for stimulants and give him a healthy stomach. An ounce of cure is worth a pound of prevention, if applied at the proper time. Thousands have been crying for help from this dreadful disease, while theorists have been talking and preaching and splitting hairs, as to whether it is a moral or physical evil.

The word habit, like the word malaria, is a convenient word with which to explain something we know nothing about.

Conversion, change of heart and the grace of God, are great moral helps, but they cannot cure a diseased nervous system, nor a depraved stomach. The moral side of intemperance has been proclaimed for ages, and yet statistics show that inebriety is on the increase.

On this subject, the medical profession have remained silent entirely too long, and have allowed the moralists to advance their own views in the matter, without any scientific examination of its cause, its nature, its character or its curability. We must admit that the moral agitation of the subject has done much good, but still there is something wanting. The removal of alcohol does not remove the craving, but rather increases the appetite for it.

If we cannot cure the inebriate by the application of drugs scientifically applied, we shall never be able to cure him by forced abstinence. Public opinion may deny this, and opposition may come from every superstitious person in the land, but that will not frighten the conscientious and progressive physician, who has science, experience and results to support him. He must go patiently on, and look beyond the present opposition of the incredulous and skeptical public, until he has worked out the physiological and pathological condition of the inebriate, and restored him to health.

Man is a complex animal, full of variations, and easily influenced by any change in his nerve centers. His call for stimulants arises from a loss of nutrition to some part of the central system, just as the call for food arises from the same cause. Therefore, it is impossible to cure this morbid craving, which has its seat in the brain, without first removing the cause by appropriate medication.

The inebriate may be anxious to quit the stimulant, but the moment he makes the attempt, his diseased stomach and brain give notice that they must have something to nourish them.

It is not within the scope of this short article to analyze and examine the many predisposing causes of this disease, such as heredity and non-heredity, occupation, etc., or we might present many facts and data that would help to determine this question, outside of any personal or social feelings, or opinions we may entertain.

There is no subject that should receive more interest, or more attention from the profession than the subject of inebriety; and yet in the past we have allowed the laity to do all the thinking, writing and legislating on the subject. It is time to call a *halt.* The physician is certainly better qualified to investigate the subject, and to pass his judgment on it, than those who have never examined it from a scientific point of view.

While I have myself devoted years to the special study and treatment of this disease, examined the different systems of treatment, [the old and the new] seen successes and failures [under restraint and non-restraint], treated with drugs and without drugs, yet I feel that we have but commenced the study of a disease whose future is full of important information, and of which there is yet much to be learned. We should never allow ourselves to be carried away by the enthusiasm which naturally follows successes, nor be discouraged by failures.

I care not whether the treatment originated with Dr. Keeley, or Dr. Somebody else. If his treatment produces good results, we ought to use it; if not, we ought to search for something better. It is not creditable to the profession to detract from a reputation made by the medicine or systems used by another, if their compositions are made known.

The same general principles apply in the treatment of this disease that apply in all chronic nervous diseases. Physical laws and forces are the same in all individuals. The system broken down by long years of dissipation, cannot be relieved by any one drug or combination of drugs alone, but by building up the whole body by special diet, baths, exercise, electricity and good hygienic surroundings.

In my hands a combination of drugs has proved most beneficial. Each and every case must have special treatment according to the symptoms manifest.

No doubt chloride of gold possesses wonderful alternative properties, and when properly and systematically given in combination with strychnia, atrophia, cocoa, quinine, sulphonal, and codea, they have a tendency to change the habits of the system and remove the diseased condition of the nerve centers and allow nature to return to a normal condition.

These powerful drugs, when given for a long time, so profoundly influence and build up the nervous system, that the inebriate feels strong and well, and gradually acquires as much repugnance for stimulants as he before had an appetite for them. The treatment breaks or removes the cause of the disease, and the inebriate starts in a new career of life. Of course he may relapse, as he may from any other nervous disease. Anything that tends to exhaust the brain, or lower the vital forces predisposes to a return of the disease.

The individual should live a life free from excitement, annoyance and worry, eat wholesome and substantial food and be constantly under the observation of a physician. Physicians who are familiar with the modern treatment of inebriety do not condemn it: but they rightfully refuse to endorse nostrums of which they know nothing. The general practitioner has not the time to devote to the treatment of these cases. He might as well attempt to treat all his cases of insanity.

Specialists have explored the grounds, investigated the disease and formulated the treatment, and are therefore more competent to handle such cases successfully. Nor is it advisable for the patient to treat himself. Most drugs that are of any value in this disease would prove dangerous in his hands. Besides, the most of the treatment must be given hypodermically, which an unskilled person cannot use.

My reason for dwelling upon the neurological and pathological aspect of this disease, is to call the attention of those outside of the medical profession to the great advancements that have been made in this special department of the healing art. The world is too apt to look with disfavor upon any new discovery that is invisible and incomprehensive to the common mind.

They grow wild over the graphophone, the telephone or electric car, but fail to realize the subtle and invisible agents that science is using to cure man. In conclusion, we may then state with perfect confidence, that inebriety is a disease and not a habit, and being a disease is therefore curable; and in order to intelligently treat it, we must study the nature and character of the disease as it manifests itself in different individuals. We must approach the subject from the physical, and not the normal side of the case. We must discard any preconceived notions and theories not based upon facts. The success of the new treatment has opened up a promising future to all who may investigate the subject.

Now that the smoke of battle following the conflict of the able article in the *Review* (on both sides of this question) is clearing away, we trust that the discovery of this new disease and its successful treatment may be judged fairly and honestly by the physicians.

The science of medicine has commenced a new war against an old but recently discovered disease. Have effectual and successful remedies been found for this disease? To this we answer, yes. When the details of the methods and remedies now used are perfected by further experience, and their capabilities and limitations more fully tested by the medical profession.

The public should not expect them to prove infallible. The best that can be expected in any disease is that it will cure the majority of all the patients to whom it is properly administered, and this is just what this modern treatment has done in dipsomania. The deliverance of humanity from this terrible disease will mark a new epoch in the science of medicine.

Facts are the basis of an infinite wisdom that never errs. The discovery of every new truth in medical science marks its advancement over past ages. New discoveries spring up with such rapidity that in the busy routine of professional life we have scarcely time to sift, weigh, and analyze their value for good or evil. By the selfishness of our natures, we are more prone to condemn, criticise, than to praise.

President Garfield once remarked that he was always struck with awe when standing near the ocean and seeing the waves lashed into fury and tossed into spray. Its grandeur would move the soul of the dullest man. But it was not from these billows, but the calm level of the sea, from which all heights and depths, lengths and widths, are measured. And so in the conflicts of science like the waves of the ocean. One follows the other, and after a moment's existence each one in turn is overwhelmed by the one that follows, and both are merged into the past. But human thought differs from the waves of the ocean in this: that we advance in wisdom and knowledge, and that an occasional wave is thrown so far out that it will never recede, so that the eyes of the whole world can behold the progress that has been made to save and prolong human life.

The medical profession is progressing, not only in the United States, but in England, Germany, France, Italy, Spain, Belgium, and the islands of the seas. This century has had its Virchow, Pasteur, Lister, Esmarch, Tait, Billroth, Paget, Koch, Simms, Morton, McDowell, Gross, Pancoast, and Agnew.

DIAGNOSIS OF PNEUMONIA.

Read before Chicago Medical Society, February 15, 1892.

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There is nothing especially new to be said on the subject of the diagnosis of pneumonia. The symptoms, both subjective and objective, upon which the diagnosis of a typical case of the disease is to be based are so familiar to you all that it would be superfluous to enumerate them, and yet the difficulties of making a correct diagnosis, which are sometimes present, remind us that the clear clinical picture as depicted in our text-books is at times widely departed from in clinical fact.

Let us make a brief comparison of relative diagnostic merits of the symptoms which present.

Some diagnostic importance is to be attached to the facies of the disorder. The anxious countenance, combined with the pneumonic spot over the malar prominence, the mahogany color which this spot may assume, and which may be an early objective sign, are at times characteristic. There is also a peculiar heavy, sweetish odor to the skin and expectoration, which to me is, at times, quite diagnostic.

The Chill.—The diagnostic importance of the chill lies in its being the initial symptom; in its violence, and in its not being repeated, it is more active than in any other disease except intermittent fever and septicæmia. *Per contra* 25 per cent. of cases do not exhibit the chill, and in senile life 60 per cent. may omit, or at least exhibit it only to a slight degree; a slight protracted chill, perhaps pain, great prostration, with fever, often constituting the first evidence of acute senile pneumonia. In children the chill is often absent, its place being taken by gastric disturbances and nervous manifestations.

Temperature.—This is of importance in that it rises suddenly, and in two or three hours attains as great a height as it may during the disease. The daily oscillation of from $\frac{1}{2}$–2° may be of service in distinguishing from the gradual rise of typhoid, its rapid declination to the normal or below at the period of crisis may become diagnostic in cases not seen earlier.

The Respiration.—Is diagnostically important in its great rapidity, its independence of the pulse rate, and of the amount of lung tissue involved. It is also not in accordance with the pain or temperature. Its *panting* character is peculiar to pneumonia. Speech is short and jerky, interrupted, as expressed by Niemeyer, contraction of the levatores alæ nasi cause dilatation of the alæ nasi, which is peculiarly noticeable in children. . The difference between the pulse and respiration in children is not so marked as in adults.

Dyspnœa.—Is of no diagnostic importance. It may or may not be present. Indeed, its absence, with a rapid respiratory rate, is diagnostic. When present it is panting in character and does not relate to the amount of lung tissue involved. It is apt to be greatest where there is grave nervous disturbance in secondary and complicated pneumonias and in children. In old age it is rarely present, even with a breathing rate of 60 or 70; here its *absence* is important.

Pain.—Pain is present in 80 per cent. of the cases over the affected lung. Its diagnostic importance rests in the fact that it disappears in one or two days, provided that pleuro-pneumonia is not present. It is absent in central pneumonias, in pneumonia of the upper lobes or apex, and in senile pneumonia it is not severe, or is entirely absent.

Cough.—Cough is present in the great majority of cases except in old people. It is one of the earliest symptoms, hacking in character, and most persistent in children. The muscular effort required in coughing may cause great exhaustion.

The Expectoration.—The expectoration furnishes one of the characteristic evidences of the disease. It is at first frothy and light colored, later becomes viscid and tenacious, but never opaque (Loomis). It then becomes of the well known rusty hue or prune juice color, depending on the quantity of blood in it, or according to Jacksch, to dissolved hæmoglobin. It may be grass green in color, due to conversion of hæmoglobin or hæmatin into bilirubin, which in turn is oxidized into biliverdin. The stickiness of the sputum is characteristic, and when removed from the mouth in the folds of a cloth, upon separating the folds of cloth the sputum will stretch out into a thin film which is quite elastic. Chemically the sputum contains albumin, mucin, sometimes tyrosin and sugar. It contains more potash than catarrhal sputum and less soda, and no alkaline phosphates as compared with 12 per cent. in catarrhal sputum. Pneumonic sputum is acid in reaction, due, according to Verdeil, to excess of pneumic acid; according to Bamberger, to deficiency in alkaline phosphates. Microscopically the sputum contains, besides the different elements derived from the products of consolidation, red and white blood cells and fat granules. According to Walshe pus cells are not found in brick-dust sputum. Various organisms may be present, of which the pneumococcus of Friedländer has been regarded as to some extent diagnostic, but at present it is generally considered that various microörganisms may have some influence in producing the disease; at least the presence or absence of this diplococcus has not obtained any particular diagnostic significance. While a careful analysis of the above emphasized elements of the symptomatology may go far towards making a diagnosis, it is to the physical signs that we look for positiveness.

The classical physical signs of the disease are so familiar to you all, that it would be tiresome to enumerate them in order.

Let us note the comparative value of the different signs elicited by the different methods of examination in the different stages of the disease.

Inspection.—During the first stage inspection will show nothing, for if there is slight loss of motion it may be due to pain. During the second stage there will be slight or considerable loss of motion depending on the amount of tissue involved, with a corresponding compensatory action of opposite side.

In double pneumonia of base of lungs the action of the diaphragm is diminished, and the respiration is costal in type. Increased action of the heart may be noticed. During the third stage, returning expansion of affected portions is observed.

Palpation.—Except as a method of determining the expansion, palpation is of little value during the first stage, as the slight increase in vocal fremitus during that period is not diagnostic. It is important when obtained; it is most marked in consolidation of upper portion of lungs, may be absent in double pneumonia of lower portions in senile pneumonia, in moderate sized central consolidations, and in very extensive consolidation of one lung. Vocal fremitus in these instances may even be less marked than over the healthy lung. Pulsation may be felt over the inflamed tissue, attributed by some to arterial pulsation in the engorged lung, and by others to transmission of the heart impulse; the latter is probably the most frequent cause.

Percussion.—Like palpation, percussion is of practical value only during stages of consolidation, the slight dulness during first stage being readily confounded with slightly modified percussion pitch from other causes. Dulness is most readily obtained in apex pneumonias, and less so in central consolidations. It is more marked posteriorly than anteriorly. There is more resistance to the percussion stroke in pneumonia than in any other form of consolidation. A lower pitched note is obtained around the consolidated portion, and from the uninvolved lung tissue, this may be slightly tympanitic; with extensive consolidation a tympanitic note may be obtained over a large bronchus; a cracked pot sound may also be obtained from the same source.

With extensive basic consolidation the tension in the vesicles of the corresponding apex may be increased sufficiently to give an amphoric quality to the percussion note.

Auscultation.—The most diagnostic physical signs of pneumonic consolidation are furnished by auscultation. Auscultation of the voice during the first stage gives a higher pitched exaggeration of the voice, which is louder and more plainly heard. It has always seemed confusing to me to use the term "increased intensity" as applied to this condition, as compared to its use in relation to the low pitched percussion note. Exaggerated voice sounds may be heard over a healthy lung where the tension of the tissue is increased and its elasticity lessened by the greater quantity of contained air, and also over tissue whose elasticity is lessened by vascular engorgement. In the former case the pitch is lower than in the latter.

During the second stage bronchophony is obtained, provided the bronchus is patent; according to Traube it may be heard during the first stage. Pectoriloquy may be heard where a bronchus is patent almost to the surface of the lung. Œgophony may also be heard. Voice sounds are modified by old age, rigidity of chest wall, emphysematous, asthmatic, and other modifications of the normal condition of the lungs.

Auscultation of the Respiration.—Respiratory auscultation is a most important means of diagnosing pneumonia. During the first stage the murmur is dry, harsher, slightly higher pitched, especially the expiration. During the latter portion of this stage the crepitant râle is to be heard. Much has been said for and against the position assumed for this râle in the diagnosis of pneumonia. Loomis says they are usually pleuritic crepitations, and yet assumes for it a position relative to diagnosis not to be obtained by any pleuritic friction, and directly contrary to that opinion. The true crepitant râle comes only at the immediate end of inspiration in a burst of fine crepitations, producing a sensation to the ear similar to that on the eye produced by certain pyrotechnic displays which burst suddenly at a height into numerous and distinct bodies of light. There are pleuritic crepitations so closely resembling these as to be difficult, or perhaps impossible, of distinction; pneumonic crepitation is present in inflammations which do not reach the pleural surface, and when pleurisy will not explain their presence.

Pleuritic crepitation is of slightly longer duration, and does not produce so markedly the sensation of numerous crepitations instantaneously produced. While it may be difficult to always distinguish between these sounds, I do not think we are warranted in dismissing crepitation as a classical sign of the first stage of pneumonia. During the second stage bronchial breathing is the classical auscultatory sign, heard at first only during expiration; later on, both during expiration and inspiration, high pitched, blowing or harsh in character. In basic or central inflammations it has the sensation of being produced at a distance, and is not so harsh as in pneumonia of the apex; it is generally obtained better behind than in front. In consolidation of upper or middle portion of lungs it is most marked at the superior angle of, or between, the scapulæ.

Laennec considered bronchial breathing due to better conduction by solid tissue; Skoda, to vibration of air in bronchi of condensed tissue in consonance with that in trachea, the solid walls around pent-up air in bronchi reflecting vibrations better.

During the second stage the heart-sounds may be heard at distant portions of chest with increased distinctness; râles from accompanying bronchitis (Skoda's consonating râles) may be very distinct.

During third stage, the gradual return of normal signs with subcrepitant râle or râles redux from liquefaction of products of consolidation form the only important signs.

Differential Diagnosis.—The diseased conditions with which pneumonia may be confounded will depend on the stage at which the diagnosis is made.

During first stage from la grippe, œdema of the lungs, pulmonary congestion, acute pleurisy, and hypostatic congestion. In la grippe the chill (if there be one) is not so severe; the temperature may be as high, but the pulse is generally faster, though it may assume the peculiar independence of pneumonia. The whole face is flushed, and the eyes have a feverish instead of anxious look. The breathing is slower, and not panting. I have found it difficult in some cases, both of pneumonia and la grippe, to make a diagnosis until time for the development of physical signs had elapsed. Chronic œdema of lungs arises during the course of other affections explaining its presence.

Acute œdema arising from cerebral injuries, irritation of the par vagum, or after other acute diseases may be mistaken for pneumonia, but the dyspnœa is greater, the breathing more noisy, expectoration frothy and serous or blood-stained, if with congestion; the râles, which may be indistinguishable from pneumonic crepitation. will be accompanied by larger bubbling râles, usually through both lungs, while pneumonia is usually unilateral; there is also absence of chill and fever.

In low continued fevers crepitant râles may be heard at base of lungs, due to congestion; they are bilateral with no marked dyspnœa or dulness.

Acute pleurisy begins with varying chills, temperature below 101°, cough dry and irritating, pain severe, expectoration slight and mucus, face pale and anxious, pulse small and tense, breathing catching; may get friction sound limited to very small area, while in pneumonia face is flushed, breathing panting, pulse full, temperature high.

Hypostatic congestion occurs in enfeebled subjects, in bedridden people, in lowest portions of lungs. May disappear with change in posture, is accompanied by no fever, has copious watery or bloody expectoration.

Meningitis in children may also be mistaken for pneumonia with cerebral symptoms. In meningitis the temperature does not go so high, as a rule, its advent is more insidious, pulse lower, no dyspnœa, face pale and distressed.

During second stage, pneumonia may be confounded with pulmonary infarction, pleurisy with effusion, acute phthisis, and lobular pneumonia.

Pulmonary infarction is connected with cardiac disease or pyæmia. There is no fever; sudden and intense dyspnœa is its main feature, the expectoration is red or black coagula of blood, there is limited circumscribed dullness surrounded by moist râles, there may be great pain, the breath has a peculiar odor.

While in typical cases the differentiation of pleurisy with effusion from pneumonia is easy and familiar to all, there are cases where it may be mistaken.

In limited encapsulated effusions with connecting bands of tissue, there may be loss of motion, no distension of inter-costal spaces, dullness, increased fremitus, increased vocal resonance, high-pitched respiratory sounds, bronchial râles heard over the location of the fluid. These modifications may be entirely due to the thickened pleuræ and localized bronchitis, and are difficult to distinguish from basic pneumonia of insidious advent. In copious effusions there may be marked compression of lung without protrusion of intercostal spaces, and bronchial breathing will be heard at the lower angle of left scapula. This may be mistaken for extensive pneumonia when there is not enough air in the lung to give any signs except over a large bronchus.

Per contra this latter condition may give such a paucity of physical signs that pleurisy is suspected. In senile pneumonia especially there may be consolidation of almost an entire lung which will not furnish one classical sign of the second stage except dullness. There is simply not enough air contained in the bronchi of the affected side to produce any vocal or respiratory sounds. Apex pneumonia may be confounded with acute phthisis. The characteristic symptoms and course of the affections are widely different, but the two conditions may be blended in such a manner that only the subsequent course of the disease will clear up doubt.

Lobar pneumonia in children is at times confusing. There is no chill, it is a secondary affection, is apt o be present in both lungs, and the physical signs are confined to circumscribed spots.

The third stage of pneumonia may be confounded with capillary bronchitis. The râles in the latter are heard all over one or both lungs, while in pneumonia they may be confined to a limited area in one ung.

In bronchitis the expectoration and temperature range are different. There is no dullness or morbid changes in voice sounds, breathing is labored, and there is more cyanosis. Senile pneumonia with typhoid symptoms, if not seen until late in its course, may be difficult or impossible to diagnose from typhoid fever; at an earlier period diagnosis is made from the relative sequence in the development of the physical signs of pneumonia and the symptoms of typhoid fever.

While in a case of pneumonia exhibiting the prominent symptoms in regular order there can be little or no difficulty in diagnosis, there are many cases where only careful consideration of all subjective and objective symptoms will prevent error. In some instances the subjective symptoms, which are very prominent in the beginning, will subside early in the case, and the patient who felt very ill when nothing physically wrong could be demonstrated, will now feel comparatively comfortable when everything wrong with the lungs is apparent.

The so-called typhoid pneumonia and bilious pneumonia are forms of the disease which have given rise to much discussion, both as to application of the terms and symptomatology. The term typhoid pneumonia has been rather indiscriminately applied to a variety of conditions with which a low form of pneumonia may be associated as a complication. The proper application would restrict it to that form of inflammation of the lungs which exhibits typhoid symptoms, and marked by rapid depression of vital power. A pneumonia complicating or following typhoid fever may be, but not necessarily so, a typhoid pneumonia.

Nervous symptoms are especially marked in typhoid pneumonia, more so than in any other, except apex inflammation in children.

Recovery is more protracted than in any other form of pneumonia. Bilious pneumonia is a form more common in the Southern States than in this latitude; it is characterized by gastric and hepatic derangements, and is considered by some to be of malarial origin. It is apparent that inflammation of the lungs occurring during the course of remittent fevers, or congestion or collapse of lung tissue during malarial fevers, might be erroneously classified as bilious pneumonia.

The terms typhoid and bilious as applied to pneumonic inflammation are not sufficiently accurate or expressive of a definite phase of the disease to merit a place in the nomenclature of pneumonia.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-Therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(Concluded from page 266.)

Ephraim Cutter, M.D., LL.D., President American Branch Society of Science, Letters and Art, of London; Corresponding Member Belgian and Italian Microscopical Societies; Physician-in-Chief Heartrest Sanatory, New York, read a paper on

THE GALVANO-CAUTERY; ITS USE IN REMOVAL OF PILES AND GROWTHS.

Galvano-cautery is employed to remove growths without bleeding, and generally with complete and perfect cure. That is, malignant growths are not apt to recur on site of removal; they may occur elsewhere.

The tissues heal healthily, so that it is difficult at times to tell whence the growth has been removed.

Principles.—1. Have a good battery; if a storage battery, test it well as to connections beforehand.

I use heavy conductors of pure silver; these are less bulky and more flexible than copper. Carbon and zinc plates variously connected so as to be portable, and not break; to have broad connections, with as few breaks as possible.

In the ordinary coupling with screw and socket there is not a typical connection. The connection of batteries should have broad surfaces coming in close contact, flatwise; in the ordinary screw coupling the contact is linear and tangential.

Cam coupling. These I like, for they do not easily come apart. Screw couplings get loose almost invariably.

Cautery holder. Mine is very simple.

First, a tinsmith rolled up a piece of tin into a tapering tube 6 to 8 inches long, one-fourth inch in diameter at one end, and one-sixteenth inch at the other. Two such tubes were mounted on a glass window plate 4 inches long, one and a half at one end and one-half inch at the other end, by flanges of tin riveted through the glass, or held in place by India-rubber bands. The primitive tinman's appliance I have would convey more current than the brass and nickel-plated one made by the surgical instrument makers.

To use it: Simply run the ends of the conductors into the large ends, crowding them in so as to hold. Before this application, a fine platinum wire 12 or 16 inches long is run through the large end of one tube, out of the small end, then through the small end of the other tube and out of the arge end. This wire can be fixed by simply bending the free end outward sharply over the tube.

Some principles about the wire:

a. It must be small.

b. It is not an écraseur. Platinum is not strong enough to cut tissues, and iron wire does.

c. Simply draw it in contact with the tissue, then pass the current by a switch; or better, by nipping the plates of the battery in the solution.

d. Stop the current when things are getting too hot. There is no need of the adjacent parts being burnt. Besides, slow and broken applications allow of the sealing of the blood-vessels, so as to avoid hæmorrhage. Rarely do I have a hæmorrhage.

e. After things have cooled, draw gently one end of the platinum wire and take up the slack, and fix by a sharp turn over end of tube. You are then ready for another application of the current. This letting the wire cut its way by burning is much different from cutting as an écraseur. In the method here used there is no disturbance of the adjoining parts. With the écraseur, all the surrounding tissues are drawn in more or less, so that more tissue is taken in than needed. In the method here used there is no indrawing of tissue, and no taking more than is required. Important repetition.

f. Another thing, the wire must be hot. A white incandescent is the best.

The connections of the battery are so arranged that they cannot come in contact with the fluid. This is done by the battery being shorter than the plates.

It is a good plan, after use, to wash cell and battery thoroughly in water and then to dry, before restoring plates to cell.

The fluid best for battery is saturated solution of bichromate of soda with sulphuric acid, 1 oz. to 11 ozs. of solution. *It should be cold.* Battery works best while cold.

The potash salt is used the most, as it is the cheapest, but it does not dissolve so well as the soda salt.

Anæsthesia.—This is not always needed, as, if the wire is properly heated it destroys the nerves as it burns, with little pain.

Case 1.—Mrs. ——, cauliflower tumor of vagina. This was a growth with a sessile base, and an umbrella expansion much like a mushroom. The site was 1½ inch within the vagina. Case had been said to be hopeless. Age, 74 years. The growth was removed by the galvano-cautery so that the site was smooth and flexible as the cheek under the zygoma. There was no recurrence at site, but disease involved the uterus, of which patient died four years later. So that life was prolonged to this extent. Anæsthetic used. No hæmorrhage.

Case 2.—Mr. ——, 1875. Dense piles surrounded the whole anus, which were painful and sore. An anæsthesia. Three-fourths of the periphery were burnt off with the wire. No hæmorrhage. One pile that made up the remaining fourth was removed with the écraseur to see if the mode of ablation made any difference. It did make a great difference. Whereas those sites where piles were removed by the galvano-cautery immediately healed, and were absolutely painless, the site of that removed by the écraseur was painful and a long time in healing. The subject said he wished the whole had been burnt off. The piles have never returned.

Case 3.—Mrs. ——, aged 65. Cauliflower growth right popliteal space; another just above the right breast. Both these were removed by the small battery referred to above, two years ago. They have showed no signs of reappearance and their sites are hardly discernible. No anæsthesia.

Case 4.—Mr. ——, husband of foregoing case, seeing her growths removed so easily, at his wife's request showed me a tumor over the spinous process of the third cervical vertebra. It protruded like the last joint of a man's thumb; was dense and hard; not painful. I cut it off. The case did well. The site is almost invisible, flexible, and there is no disfigurement by a scar. No hæmorrhage; no anæsthesia. Had I been prepared for this case it would have been more expeditiously performed.

Case 5.—Mrs. ——, aged 78 years; 1879. A hard, angry-looking tumor of the size of a split pea on the right upper eyelid. It was mobile and somewhat painful. This was removed by the small battery. No anæsthesia. It healed up so well that there was no scar or mark to indicate its presence, in two weeks. Considering the age of case and the location it seems as if this was good surgery.

Case 6.—Capt. ——, aged 60; 1891. A small growth on chin, ugly-looking, and increasing in size. Operated upon in office. Small battery used. Cocaine anæsthesia. Three weeks later could find no scar nor trace of operation.

Case 7.—Miss ——, aged 42; 1891. Voluminous and sensitive piles. Patient came under ether badly; had to give chloroform before anæsthesia was effected, and then patient tumbled and kicked so as to interfere with operation seriously. This was not done to entire satisfaction, still the final result was good and the parts resumed normality.

Case 8.—Mrs. ——, aged —; 1882. Cancer of left groin; was assisted by Dr. William G. Wheeler, of Chelsea—Nature's nobleman. Tumor large as a hen's egg. Anæsthesia. Operation difficult, because of the sessile nature and cancerous lymphatic glands of the groin. Still I succeeded in removing it, and the upper margin of cavity contracted so much as to cover the burned area well. It healed well; but the disease recurred in right poupart's ligament and womb and destroyed life.

With these few cases I close this paper, trusting that the fellows of the society will another year report more cases. It seems to me that this operation is almost an ideal one for piles and small growths.

Dr. A. H. Buckmaster, of Brooklyn, read a paper entitled

A CASE OF RETRO-FLEXION AND CYSTIC DEGENERATION OF THE OVARIES TREATED BY HYSTERORRHAPHY UNSUCCESSFULLY AND CURED BY ELECTRICITY.

In reporting this case, I have nothing startling or even novel to offer the society. It is the same old story of a case that has undergone a serious surgical procedure to be finally cured by one unattended with risk. The patient was a young unmarried woman. In 1887 she complained of pain in the side and abdomen, and in locomotion, and in 1888 she became an invalid. There were no elements of a hysterical nature in the case. In 1889, she fell into the hands of a distinguished specialist of this city, and he found much enlarged and cystic ovaries and retroflexion. This gentleman treated her for some time with but slight improvement, and finally made an explorative incision and stitched the uterus to the abdominal wall. The tubes were normal in size and they and the ovaries were left, as the patient had specially desired that they should not be interfered with. She remained under treatment after this operation for a year, and at the end of this time there was little or no improvement. The gentleman who had charge of the case then sent her to me to "try what electricity would do for her." When I examined the patient I found the uterus had fallen back to a slight extent and on the left side there was a hard mass that felt not unlike a fibroid in the region of the broad ligament and extending behind the uterus. I gave the patient three treatments a week, using the clay electrode on the abdomen and a platinum tip in the vagina, covered with a large mass of moistened cotton so that the resistance from the vagina was very great. Within two months large pockets were made in the thickened mass that gave the sensation as if the vagina contained large cicatricial bands, but the closest inspection failed to reveal anything like scar tissue. The absorption of the inflammatory tissue had taken place more actively in the immediate neighborhood of the point of contact of the electrodes.

After this stage of the treatment had been reached the patient went to her home in another city and remained quiet for several months, and having felt much relieved returned again for treatment. The condition was much improved and the patient was put on the same treatment for two months more. At the end of this time the uterus was freely movable and the bastard bands had almost disappeared. Six months later the patient was in robust health for the first time since childhood and she has continued so, and I think she may be pronounced cured as the ovaries have returned to their normal size. The surgeon who sent the case to me was so much pleased with the result that he has since placed several patients under my care for this treatment and while we have not had any case improve so markedly as the one cited, from a great doubter he has become a convert to the usefulness of electricity.

Before closing this case I desire to call to the attention of the society a new form of water rheostat that I have devised, and which I believe is much more convenient than any of those now in use. The plates are like those in the Bailey rheostat only made larger, and instead of working up and down in the fluid with a ratchet the plates are immovable and the water let into the jar by a piece of tubing sliding into the faucet and syphoned out again. The faucet is slowly turned on so that a drop at a time is admitted and the strength of the current is absolutely evenly increased. No attention is given to the rheostat—it flows in slowly until the desired amount is reached or the patient complains of pain, then the faucet is turned off the current, the tubing is pulled out of the supply pipe and it syphones out the rheostat jar. If one has the time they are not difficult to construct and have proved a revelation to me in point of comfort to the patient and convenience to the operator.

G. H. Whitcomb, M.D., of Greenwich, N. Y., read a paper entitled

A RARE CASE OF TWIN-INTRA AND EXTRA-UTERINE PREGNANCY TREATED BY ELECTRICITY.

Gentlemen:—In calling your attention to the rare, and, taken as a whole, perhaps unique case here detailed, I feel the weakness of my position, in that my diagnosis was not verified or approved; not verified because fortunately an autopsy was not required; not approved, as a gynecological surgeon was not accessible, and financial considerations forbade sending for one at a distance.

The case was an anxious one, closely watched, and each fact carefully verified at the time. Over-statement has been studiously avoided. The case briefly stated, formed a part of the illustration of a paper read the following April, before the Union Medical Association of the counties of Berkshire, Mass., Bennington, Vt., and Rensselaer and Washington, N. Y., on Electro-Therapeutics in Gynecology.

It was not my purpose to give the case further publicity, until invited by your president to report it here, he having learned of the case through a friend of the patient. On the 10th of March, 1879, I was first called to see Mrs. W., age 36 years, the daughter of a physician and wife of a clergyman. She was a large, fine-looking woman, and under favorable circumstances would have maintained robust health. Her first and only child was born six years before, at which time she received a bilateral laceration of the cervix, resulting from a rigid os, and tedious labor. Her getting up was slow, owing to some inflammatory trouble from which she suffered for about five years, when she had a trachelorraphy at the Presbyterian Hospital, N. Y., after which she improved materially, until she became pregnant three months ago.

Shortly after conception she commenced to vomit severely, again became ill, and soon was troubled by severe, sharp colicy pains in the left inguinal region at frequent intervals.

Gestation had advanced to the twelfth week when suddenly a sharp cutting pain came in the region of the left cornus, and persisted with exacerbations, and attended by a sharp local peritonitis.

When I saw her a few hours later vomiting was constant, pain severe; pulse 120, small, hard and wiry, temperature 101.5. Her countenance was pinched and anxious and gave evidence of great distress. A satisfactory examination was impossible at this time, though unusual fullness could be detected in the left side, with the uterus pushed somewhat to the right.

With the use of hot fomentation, rectal enema, and anodynes for two days the inflammatory trouble subsided greatly. The uterus was now found anteverted and prolapsed, the cervix resting upon the perineum just above the sphincter ani, and the fundus lying forward against the bladder, causing vesical tenesmus. The uterus thus located gave an unusually favorable opportunity for examination and diagnosis. The organ was larger than would correspond to this period of gestation. This was due in part to the previously existing hyperplasia and the encroachment of a large mass on the left, which seemed to be continuous with and a part of the uterus. This body was as large as an orange and supplied with numerous pulsating vessels; not clear in its outlines; firm and elastic in its consistency; continuous with and not showing any line of demarcation from the uterus. The enlargement was more clearly outlined in front than behind, where a formless mass of exudation served to partially obscure it. It seemed in form much like a subperitoneal fibroid, well embedded in uterine parietes. Considering it globular, about two-thirds of its volume would lie outside the proper outline of the womb. The uterus, from its size, shape, and consistency, unquestionably contained a fœtus. I will not here discuss the diagnosis further than to say that the history, together with the conditions found, indicated as clearly as possible that we had to deal with either a tubo-uterine or interstitial pregnancy, or one in a rudimentary cornu, the first of which I believed to be the case. At all events, we had an ectopic gestation to treat, and one that had already produced a partial rupture, which might at any moment become complete. Prompt action was imperative. Laparotomy offered little, if the diagnosis were correct, since its danger would be little less than those already impending.

My personal knowledge of a case reported by Dr. T. G. Thomas as a successful treatment of abdominal pregnancy by electricity, and a favorable result in a probable case of my own, together with my experience with this agent in gynecological practice, determined its application here.

My portable galvanic battery being out of order, a faradic machine was used, with a ball electrode in the vagina, immediately underneath, and a small flat one directly over the mass on the abdomen, so as to confine the current closely to the desired locality. A mild and increasing current was passed for fifteen minutes daily during two weeks. The symptoms improved continuously, in all respects, though some pain persisted. The enlargement diminished noticeably, and seemingly from its outer surface, until the 25th, when it was not to exceed one-third its original size. The impression gained by constant watching was that it had gradually receded into the uterus. This occurred, however, without an increase of pain. When the process commenced and ended, I am unable to say. It was not complete when the last treatment was given, from which time no examination was made, the patient being about the house, and moving into new quarters. The morning of the 26th a slight dark-brown discharge occurred, lasting for an hour, after which it was not seen until the evening of the 27th, when it was attended by a periodical pain. Abortion promptly following, the patient lost the fruits of a twin conception. The cord of the fœtus first delivered was broken; that of the second was attached to a placenta on the right front of the uterus near the fundus.

This was the only one within reach of the finger, which could not be carried to the supposed location of the other. The secundines were retained. The enlargement at the left of the fundus was now represented by a small, indistinct fullness only. Under antiseptic precautions the placenta on the right was removed nearly entire, and had the insertion of but one cord. That of the first born embryo was found in an extension or pocket in the location of the left tube, which admitted the curette forceps two inches further than they could be passed in any other direction. In order to reach this pocket, it was necessary to introduce the forceps with the concavity of the pelvic curve to the patient's left, when it was readily entered. With one hand locating the fundus it was apparent that the beak of the instrument passed to the left. The task of removing this placenta was both difficult and dangerous. With the aid of the patient's husband, who held the uterus tilted to the right, thus in some measure straightening the passage, it was picked away piece by piece until no more could be found. The curette was inadmissible here from danger of perforation. In this respect the forceps can be used with extractive force only, which greatly lessens the probability of this accident. The clearing out and irrigation of the womb occupied two full hours of anxious labor, which, fortunately, was amply rewarded by a prompt recovery. Pulse or temperature never exceeded normal: no pain, no hæmorrhage, discharge of débris, or foul odor occurred. In two weeks the patient left for a new home in the West. The day before her departure a most searching examination disclosed nothing pathological. The tubal enlargement had disappeared; involution was well advanced. In little more than a year the woman gave birth to a healthy child at term; and, so far as I can learn, after an uneventful gestation and labor. From the history, conditions, progress, and termination of the case it would appear that the diagnosis was verified, and treatment justified.

It is probable that the second ovum occupied such a position in the tube or rudimentary horn, as to jut slightly into or approach nearly, the uterine cavity; and that the localized electrical current secured its expulsion into its normal habitat, as in some cases before reported. In this instance the process was gradual, owing to the presence of a normal pregnancy. The absence of marked contraction pains during this transition is unusual, perhaps, though accounted for by the slow and gradual change, which was not completed until just before abortion. The integrity of the funis of the second embryo, enabled me to determine that the first was the one located above, and in the annex, and whose dislocation caused the loss of both, which lends interest to the case.

Dr. A. G. Henry, of Cortland, N. Y., read a paper entitled

A REPORT OF THREE CASES OF UTERINE TUMORS TREATED WITH GALVANISM.

The battery I used was a 32-cell one. As I could in neither of the cases introduce a sound into the uterus more than 1½ inch, I used a small olive-shaped tip for the intra-uterine electrode.

In each case I invariably used negative cauterizations. The strength of the current ranged from 20 to 75 milliampères—usually after the first few applications from 35 to 55. Duration of sittings five to ten minutes.

Case 1.—Mrs. B., of Trenton, N. J., aged 49, married, never had any children, just passed the menopause. Examination showed an intramural fibroid tumor, filling the pelvis and reaching to within 2 inches of the umbilicus. Its growth had extended over several years, and was now giving considerable trouble to bowels and bladder. No history of recent or previous pelvic or abdominal inflammation. Began treatment July 9, 1890, and continued until December 2, 1890, —fifteen treatments in all being given. There was steady improvement from the first, and at the last sitting, December 2, the growth was no larger than a hen's egg. She was symptomatically cured. Examination of this patient August 27, 1891, showed no recurrence of the growth.

Case 2.—Mrs. W., married, aged 44, menses regular. Last summer pelvic trouble induced her to seek medical aid. I first saw her August 5, 1890; she was confined to her bed with quite severe general pelvic inflammation. The inflammation had subsided September 10. A subperitoneal fibroid tumor, not larger than a goose-egg, situated more to the left, and projecting backward so much as to seriously annoy the patient whenever a movement of the bowels was attempted, was found. There was still much tenderness in the pelvic and lower abdominal regions. Treatments were begun September 13 and continued until October 17, thirteen treatments in all being given. Tumor was reduced one-half and she was approximately cured (symptomatically). She returned to her work, teaching, October 19. I examined her a few days ago—about August 20. Tumor rather smaller than when I ceased treatment last October. Menses still regular, feels perfectly well.

Case 3.—Mrs. F. B., aged 44, married, has never borne children. Eight or nine years ago she began to have some pelvic trouble, a feeling of fullness, leucorrhœa, etc., and some six years ago she noticed herself getting larger.

The enlargement continued to increase from year to year, until October, 1890, when a severe pelvic inflammation sent her to bed, where I first saw her, October 7.

There was pelvic and lower abdominal peritonitis. Abdomen much enlarged and tympanitic. There had been considerable flooding at each recurrence of the menses the past few months, and the last four weeks hæmorrhage had continued all the time. After the inflammation had somewhat subsided, October 22, an examination revealed a large fibroid tumor, completely filling the pelvis and reaching an inch above the umbilicus.

The growth was very hard and somewhat uneven. Pulse rapid, temperature from 100° to 102°, hæmorrhage about constant, patient much reduced. It was deemed best to try electricity without further delay. Intra-uterine treatments were given and begun October 31, 1890, and have been continued, with interruptions, to the present time. With the exception of a slight inflammatory attack last spring, progress toward recovery has been uninterrupted. The tumor now is not larger than a hen's-egg. She is doing her own housework, and says she feels better than for many years.

Dr. Massey: As this is the ending of our session for 1891, and Dr. Morton has been elected President of our next session, I invite him to the chair to close the meeting, as is the usual custom.

Dr. Morton: I will, in accordance with the usual form, declare this meeting closed, and announce that the next meeting will be the first week in October, 1892, to be held in New York.

THE annual dues of the New York Academy of Medicine, have been increased to twenty dollars per year.

Philadelphia County Medical Society.

February 10, 1892.

Dr. L. K. Baldwin in the chair.

Dr. John B. Roberts read a paper entitled:

A CASE OF MALIGNANT DISEASE OF THE STOMACH IN WHICH GASTRO-ENTEROSTOMY WAS CONSIDERED.

I desire to briefly report the result of a case in which I was only deterred from making preparation for gastro-enterostomy by the debilitated condition of the patient, but in which the post-mortem findings demonstrated the inutility of such an operation. The delay which prevented me from subjecting the patient to the expense and anxiety of so serious an abdominal operation is so justified by the pathological conditions, that it has caused me to present the specimen for examination.

Upon being summoned to another State for surgical consultation, I found a man about 52 years of age suffering from great pain in the epigastrium. He was vomiting large amounts of fluid. The temperature was normal, but the muscular weakness was great, and sleeplessness pronounced. The abdomen was distended with gas, and there was a marked prominence in the neighborhood of the left hypogastrium. The patient had suffered for about four years with dyspeptic symptoms, during which time he had been under the care of many physicians. He had recently been treated by lavage, which relieved the pain temporarily, and he had suffered with such obstinate constipation as made the attending physician think that there was some obstruction in the alimentary canal. It was this, as well as the excessive pain, that induced him to call in surgical aid.

The character of the vomiting, the situation of the prominence in the left hypogastrium, and the general aspect of the case, made it very evident to me that it was one of dilatation of the stomach. I gave an opinion that it was very possible that there was malignant disease in the neighborhood of the pylorus, but it was impossible to determine the question because of the distended abdomen, and the diagnosis was hence left undecided. The administration of food by the mouth was stopped entirely, and enemata of peptonized milk combined with whisky were given every two hours night and day. Lavage was continued to empty the stomach and relieve pain. This line of treatment was continued for about three weeks. The patient's discomfort was relieved, the pain disappeared, the vomiting discontinued, and the consequent reduction of tympany rendered it possible to detect a hard mass below the liver, in the median line. The bowels in the meantime had become regular, by the occasional administration of cascara. This for two weeks, however, was not needed, because of spontaneous evacuation of the bowels, probably due to the enemata. Microscopic examination of the vomited matter showed me that blood was present in the ejecta, and I now made a diagnosis of malignant disease.

At the end of three weeks small amounts of nourishment were given by the stomach. We commenced with a drachm of peptonized milk with a few drops of whisky every two hours, and daily diminished the amount of food administered by the rectum. Gradually the amount of food taken into the stomach was increased until it reached 3 ozs. every two hours. The prolonged rest during the period above mentioned seemed to have been beneficial to the stomach, so that the small amounts of food given at frequent intervals were digested without pain; there was no vomiting, though the tympany became more or less prominent.

At the time he began to take food by the mouth I told the patient that he had malignant disease of the stomach, and that exploratory examination was proper, with a view of determining whether an artificial opening could be made between the stomach and intestine, or the growth removed. This was deferred until the strength of the patient should be somewhat improved under gastric alimentation. The patient, however, continued to lose ground, and died about a month after my first visit. When the food given by the stomach reached three and a half ounces he began to have pain.

The autopsy showed, as the specimen makes clear, malignant disease infiltrating about one-fourth of the lóng diameter of the stomach, with several nodular masses at the pylorus. The pylorus, however, is sufficiently patulous to admit readily the introduction of a finger-tip. There was, therefore, no marked obstruction. The cardia is much thinned, while the middle portion of the stomach presents the normal thickness and characteristics. An adhesion has taken place between the stomach and the liver at the point where the growth is most marked.

Gastric dilatation had occurred secondarily to malignant disease of the pylorus. The only time at which it seems to me gastro-enterostomy would have been wise was previous to his coming under the care of Dr. H. A. Stout, who called upon me for assistance; and it is very doubtful if at any time the operation would have been beneficial. The pylorus, as shown at the autopsy, must have had an opening as large as would probably have been made had the operation in question been performed; and the infiltration of the wall of the stomach for one-third of its length would have made the area for an opening between the stomach and intestine limited. An opening would have had to be made between the thinned and dilated portion of the stomach at the cardiac extremity and the large area infiltrated with malignant growth toward the pyloric end. This, of course, could have been done, but prolongation of life would probably not have been gained.

The facts that the man was walking about and attending to business, and that the tumor presented no external manifestations make it extremely probable that an operation would not have been suggested previously to the time he came under the care of the physician who consulted me, except by an enthusiast.

I present the case partly because of the interesting character of the specimen, and partly as a contribution to a branch of abdominal surgery which is assuming increased importance.

The recent series of cases reported by Dr. N. Senn have been read by me with great interest; but the conclusion has almost been forced upon me that many of them were cases that scarcely justified operative procedure. Perhaps I am too conservative; but may it not be that he is too enthusiastic?

John B. Turner, M.D., read a paper entitled

SUCCESSFUL TREATMENT OF MEMBRANOUS CROUP WITHOUT EITHER TRACHEOTOMY OR INTUBATION.

The class of cases to which I refer are of laryngitis with fibrinous exudation and not complicated by diphtheria. My experience before February, 1891, covering a period of nine years, was to have treated medicinally eight cases, six of which died, showing a mortality of 75 per cent.

The results of tracheotomy in the practice of my medical friends having been so unpromising (all the patients dying), I did not at any time see fit to have the same tried in my practice. As to intubation, my experience is small—two cases, both dying. I condemn tracheotomy and intubation in true croup, as the same objections obtain in both, viz., that the accumulation of muco-pus in the lower part of the trachea and in the bronchi is lost sight of. Paralysis of the posterior crico-arytenoid muscles, preventing dilation of the glottis in inspiration, is a symptom no doubt relieved by tracheotomy and intubation, but the other paramount elenents of danger in the case, as pneumonia, capillary bronhitis, accumulation of muco-pus, feeble expiratory efforts reventing expectoration, due to general debility and exustion, are *unremedied.*

The treatment I have used since February, 1891, is based pon the allaying of inflammation about the site of the nembrane, effecting the separation of the membrane, lessening the formation of new membrane, effectually controling laryngeal spasm and sustaining the strength. I use asfœtida by suppositories to allay spasm and to give needed ntervals of quiet, restful sleep, and consider it a valuable nd much overlooked remedy in membranous croup.

For the other conditions or symptoms I used ammonium chloride given in syrupy mixture without water, as the addition of water makes it unpalatable to children.

In Wood's Reference Handbook, in an article written by Dr. Nickles, of Cincinnati, "Wibmer found a very decided increase of the bronchial mucus after hourly doses of eight to fifteen grains of ammonium chloride, and other careful observers noticed the same effect. Experiments of Rossbach seem to show a different mode of action. Under the influence of the salt, the tracheal mucous membrane became anæmic and the secretion of mucus gradually ceased. The utility of ammonium chloride in catarrh of the air-passages may therefore depend upon a favorable modification of the vascularity of the mucous membrane, not merely upon a change of the quantity of the secretion." I am of the opinion that Rossbach's view is the more probable one regarding the action of ammonium chloride, and will better explain its beneficial action upon the catarrh accompanying croup.

I will now give the details of the treatment pursued in my last four cases, and advocate it as one simple, humane, and easily applied.

Case 1.—On February 16, 1891, I was called to see Sallie B., aged eleven months, who was suffering from a severe attack of membranous croup. The mother had lost two children on former occasions by the same disease, one in twenty-four and the other in thirty-six hours. Why croup has a predilection for certain families, I am at a loss to know.

I had the child taken to the Children's Hospital, and Dr. Samuel Ashhurst confirmed the diagnosis and recommended tracheotomy, which was refused by the mother. When the child was brought from the hospital to her home I gave the *following* treatment:

℞. Ammonii chloride, ʒj.
Syr. tolutan. fℨij. ♍.
Sig. Half a teaspoonful every two hours.

℞. Asafœtidæ pulv., gr. xvi.
Quininæ sulph., gr. iv.
Codeinæ, gr. ½.
Olei theobromæ gr. cxxx. ♍.
Sig. One every four hours.

The child did well (the attack lasting eleven days) and recovered. The patient received whisky and milk at regular intervals, and was kept in a well-ventilated room. By this treatment the appetite remained fairly good, and the strength was sustained. The same child had another attack on December 18, 1891, and by the same treatment was restored to health. I call this second attack Case 2.

Case 3.—John D., aged eighteen months; attacked on August 26th. Same treatment, and child recovered on the eighth day. The mother poulticed this boy on chest and over trachea, of which action I approved.

Case 4.—Harry J., aged two and a half years; attacked March 6th. Disease lasted one week. Recovered by means of same treatment. This case received larger doses of the ammonium chloride mixture because of his being older than the other children.

There was no atomization used on these cases.

Discussion.

Dr. Edwin Rosenthal: It seems to me extremely strange that such a disease as membranous croup should be so easily remedied by muriate of ammonium and asafœtida suppositories. In a series of some four hundred and twenty odd cases which I have followed and studied, in my own practice and in the practice of my friends, which were not treated by intubation or tracheotomy, and in which the diagnosis is undoubted, but three recovered. In sixty-four cases that I have intubated, fully one-half died. Many of these cases had been previously treated by muriate of ammonium, and also by chloral, which I consider a better antispasmodic than asafœtida. Chloride of ammonia has been long used in this disease. It was recommended by Dr. Condie—one of our earliest members—for membranous laryngitis, and in *Watson's Practice of Physic*, edited by Condie, was described the method of its action, which, if I remember correctly, was to defibrinate the blood, prevent the pseudo-membrane from forming, and facilitate the absorption of tissues already formed. If Dr. Turner considers membranous croup one disease and diphtheria of the larynx another disease, he falls into error regarding treatment. If he means to say pneumonia, capillary bronchitis, and œdema of the lungs, which are so often complications of croup, succumb so easily to the treatment by muriate of ammonia, or that they will not occur when cases are treated in this way, I think places him also in error. I have seen so many fatal cases of croup that I cannot believe that true membranous laryngitis can be successfully treated in the manner he describes. I have practiced intubation over one hundred times, and have had fairly good success. But I have not relied upon remedial measures such as have been mentioned.

Dr. M. O'Hara: The easy cure of cases supposed to need tracheotomy can bear a very different explanation. It may well be in view of the many cases of recovery after the apparent judicial condemnation of the doctor, not depending sufficiently upon the powers of Nature.

Some years ago I reported a case and published it in the *Proceedings* of the County Medical Society, which can be referred to for details (vol. i, p. 21), entitled "Remarks on a Case in which the Necessity for Tracheotomy was Averted by the Systematic Action of Intense Cold Exciting Forcible Inspiration." This was a case in which a most eminent throat specialist considered the time gone by for success by tracheotomy, in a case of nasal diphtheria after measles, and considered it would be closed by death in eight hours, and yet recovered under use of ice, and he frankly told the mother afterward that he probably would have finished the case with the knife. Here there was an error of judgment; though all thought there was membranous deposit, there could not have been any. I have known similar cases, and sending for a consultant surgeon in several cases, waiting brought the patient around. The late Dr. Henry A. Smith related at one of our meetings many cases of this kind in a discussion on the topic, and I hope those of us present familiar with the point will relate such cases for instruction. I rise to have this point specially ventilated.

Dr. H. R. Wharton: I agree with Dr. Turner that many cases of croup get well with the simple medicinal treatment, but I disagree with him in regard to the large number of unsuccessful results from tracheotomy and intubation. My experience with tracheotomy is that even in the most urgent cases many recover. Last year, at the Children's Hospital, 43 per cent. of the tracheotomies recovered. I have used chloride of ammonia to some extent in the treatment of croup, but in the last few years I have put more confidence in the carbonate of ammonia, and follow the plan of treatment suggested by Mr. Parker, an English surgeon. I combine the carbonate of ammonia with syrup of senega. My routine treatment in ordinary cases of croup, in which the symptoms are not sufficiently urgent to call for intubation or tracheotomy, is to place the patient on carbonate of ammonia with senega, and to see that he is thoroughly stimulated. At the same time I believe that local treatment by inhalation of some medicated vapor is of service. I have recently employed the ordinary steam atomizer, in which I use an alkaline solution, such as carbonate of soda and glycerine. The atomized solution is used as frequently as every half-hour or hour, according to the urgency of the symptoms. This solution is also useful after intubation or tracheotomy. I believe that many cases of croup do get well if carefully treated and do not come to the point where operation is necessary. I think that the use of strychnine and digitalis in the early stages of the disease often prevents trouble later on from cardiac failure. While at times these very urgent cases will get better without operation, yet in my experience this is the exception. Within a year and a half, death has occurred in five cases of croup in which I was summoned to do intubation or tracheotomy, before I could reach the patient. I think it unwise to say that in these urgent cases operation should be postponed, for many cases of croup die suddenly.

Dr. B. Trautman: We should not lose sight of the distinction between catarrhal croup and membranous croup. Most cases of catarrhal croup will get well without much treatment. By keeping the patient warm and giving an emetic, the cure will be effected. In membranous croup the tendency is to postpone operation too long, till cyanosis sets in, and then the patient generally succumbs. The course of treatment which I pursue in membranous croup is the administration in one mixture of bichloride of mercury, tincture of iron, and chlorate of potassium. As an emetic I give sulphate of copper, 1 gr. for each year of the child's age. That will often bring away the whole membrane. If it does not bring it away, tracheotomy or intubation should be done at once.

Dr. Nutt, of Williamsport: This subject has interested me very much. For the last eight or ten years I have done intubation frequently—I think in seventeen consecutive cases—and out of that number there have been only four deaths. I am therefore a strong believer in intubation, and I had hoped that there would have been a more general discussion on this point. I fully agree as to the necessity for intubating early. When I first began the use of this measure, I usually put it off until the last moment, as a last resort. When the lungs are all filled up and the child cyanotic, I do not believe anything will save the child. I cannot see that intubation has any bad effect, and if used early in the disease, we can reduce the rate of mortality very greatly.

Dr. John B. Roberts: It seems to me that this is the old story, that the man who never operates is sometimes wrong, and the man who always operates is sometimes wrong. The discussion seems to be a little uncertain, because some speakers use the word croup and others the word diphtheria. Whether or not they mean the same thing, I do not know. If I am called in surgical consultation to a child with difficult respiration due to some inflammatory disease of the throat, it makes little difference to me whether some pathologists call it croup and some diphtheria. I call them all diphtheria, and advise the attending physician to report the case as diphtheria to the Board of Health. Eight or ten years ago I made up my mind that in all cases of diphtheria where there was dangerous difficulty in respiration, my duty was to advise tracheotomy, and to do it. That was before the time of intubation. I did tracheotomy over and over again, and, though I never saved a patient, the relief to the patient was so great that I never regretted the operation. I believed that in all such cases, where there was dangerous cyanosis, my duty was to open the trachea. Since intubation has been revived by Dr. O'Dwyer, I have adopted that as the primary operation, and reserve tracheotomy for a later procedure. To see a child suffocating to death and withhold your hand, is almost as bad as saying that you will not use the stomach-pump, even though you know that the person has poison in the stomach. Of course, I do not advocate intubation or tracheotomy in cases where the child is dying from the diphtheritic poison, and not from obstruction in the larynx. A few weeks ago I was called in consultation to see a child. The case had previously been seen in consultation by another gentleman, who said that nothing could be done. I was then called, and introduced an intubation tube, and in a few minutes the child was breathing comfortably. The tube was vomited out, however, but the relief which he had experienced was so great that the child permitted me to apply the tube again without struggling. He subsequently wore the tube about two days, and is now well. We must select our cases for tracheotomy and intubation, just as we select our cases for laparotomy or any other operation.

Dr. John C. DaCosta: It is not strange that such brilliant surgeons as the last speaker advocate tracheotomy. But what is the mortality? Some ten or more years ago, I collected and analyzed twenty-four or twenty-five hundred cases of tracheotomy, and the result showed that only about 24 per cent. recovered. But one reference has been made to-night to the old-fashioned method of using emetics. Nothing will dislodge the membrane quicker in croup than an emetic. You may use ipecac or sulphate of copper, but one of the best is the yellow sulphate of mercury, which latter, I think, has more than a simple mechanical effect. In true croup there is nothing equal to the internal administration of mercury, which may be given in the form of the mild chloride, or of the bichloride or the old-fashioned blue pill. Another point is the enforcement of sustaining treatment. If quinine is used in suppositories, it should be in the form of the bimuriate or bisulphate, or the sulphate mixed with tartaric acid, so as to insure its being dissolved. Anodynes may be needed to quiet spasm.

Dr. John B. Deaver: As has already been said, each case has to be treated on its own merits. There is much to be accomplished both by tracheotomy and by intubation in cases of true croup. My experience, however, has been that in many cases the introduction of an intubation tube occludes the larynx still further, and increases the child's suffering; in those cases I do tracheotomy. I think that these operations are better applicable to cases of croup proper, and I am not in favor of doing them where there is much depression, as occurs in true diphtheria. I cannot agree that all cases of diphtheria die an easy death, even when the tube is employed. I have seen them strangle as much after intubation or tracheotomy as before. The operation usually does give relief, but the inflammatory process may extend further down and the symptoms of obstruction may be renewed. I believe strongly in the use of mercury in these cases in order to get its constitutional effect. I use calomel and push it as far as I can, it being difficult to salivate children. The bichloride acts quicker, but it is more apt to irritate the gastro-intestinal tract. I believe that there is a difference between croup and diphtheria. I do not believe that they are one and the same disease. The one is local and the other is constitutional. This subject is a very interesting one, but I do not see how we are to instil into the minds of any the cases which should be intubated and those in which tracheotomy should be done. This question must be judged by the experience of the operator.

Dr. W. S. Stewart: The doctor did not make a distinction between the true membranous croup and what is known as spasmodic. The latter can be relieved by emetics and counter-irritants, but in true membranous croup we need something more than emetics. I agree in regard to the use of the remedies to which reference has been made. I believe in calomel, or mercury, in other forms. I have been to many operations for tracheotomy, and have seen some cases when the operation was performed where I believe I should have still hoped for recovery without an operation. It is hardly fair to record such cases of recovery as a result of the tracheotomy. On one occasion I went three times to one case to assist in performing tracheotomy, and every time we were refused the privilege. Death was confidently prophesied by the attending physician, but the child recovered.

On another occasion I was attending a child where I feared death was going to result, and I advised the family to call in consultation a gentleman who intubated. During the interval of sending for the doctor and his arrival, the child improved; still, I asked the doctor if it was a good case. He said he regarded it as a good case for intubation. I told him to put in the tube, and turned the case over to him. On the second day the child was dead. I do not say that we should never operate or never use a tube, but I do say that those who are enthusiastic in regard to operations are often careless in their zeal to press the proper treatment. They do not pursue the medical treatment as perseveringly as they should.

Muriate of ammonia by itself is very hard on the stomachs of children, but a good combination is chloride of ammonium with chlorate of potassium and syrup of senega. I often combine with this, syrup of squills, ipecac, and tolu: I also administer quinine by the mouth in the form of the tannate. This method often has a very good effect in arresting the development of ordinary membranous croup, when given in large and frequent doses, and the expectorant has the effect of absorbing the membrane already formed.

Dr. G. Betton Massey: There is a therapeutic item to which I have often wanted to direct the attention of general practitioners. During the ten years that I spent in general practice, I invariably prescribed insufflation of powdered sulphite of sodium in those cases of diphtheritic sore-throat with general systemic disturbance that seemed to be the first stage of diphtheria. In all these cases the membrane disappeared in from twelve to twenty-four hours, and it was a curious fact that in these ten years I did not see a bad case of diphtheria. Whether these membranous sore-throats were of that nature, and were arrested, I am of course uncertain. The powder was insufflated through a paper roll every half-hour, the paper being burnt after each insufflation to prevent the wrong end being subsequently used and infecting the nurse.

Dr. Daniel Longaker: The theory which best fits the facts in these cases is that most of these cases are diphtheria, and that we have either a primary laryngeal diphtheria or a secondary laryngeal diphtheria. It often happens that a child is taken with membranous laryngitis and two or three days later the membrane will appear in the fauces. Diphtheria is primarily a local disease, with, later, general manifestations. It seems to me that the local disease in the fauces is the point of invasion, and a poison is developed and absorbed with such serious effects. I do not think that any one method of treatment of croup can be maintained. Every case must be treated on its own merits. I have found the peroxide of hydrogen very efficient when used as a swab or as an atomized solution. I have used it in a number of cases in the past three or four months with satisfactory results. I do not advocate exclusive medicinal treatment or exclusive treatment by intubation, or exclusive treatment by tracheotomy. Each method has its own field of application.

Dr. Rosenthal: I have used the peroxide of hydrogen for over a year. Of the kinds obtained in the markets—manufactured by Charles Marchand, Rosengarten & Sons, and Merck—I find that of Merck the best. At first I used it diluted, but gradually increased my strength of solution until now I use it absolutely pure. I apply it in membranous laryngitis in the form of a spray by means of an atomizer quite copiously, and where the membranes are visible the applications are made direct with probangs of cotton; my applications are made hourly. My remedial treatment is essentially antiseptic, mercury being used fearlessly. I also use stimulation freely—as for instance, in a child of four years I gave as much as a gill of brandy in twenty-four hours. I firmly believe that my success in the treatment of diphtheria, whether it be of the larynx or fauces or nose, is based on this antiseptic treatment; and in peroxide of hydrogen I think we have a most potent means of applying it. I attribute my success to it, for I believe, while diphtheria is a constitutional disease, the presence of the membrane hastens the absorption of poisons and produces septicæmia and toxæmia; and in the peroxide of hydrogen we have a cleansing agent which quickly modifies, removes, or alters these conditions of things. In the last epidemic I have treated all forms, except of the larynx, with but one death, and that one was in a rhachitic child. There is one point that I wish to place myself on record as against, and that is, the indiscriminate use of emetics in membranous laryngitis; I believe it is wrong in theory, wrong in practice, death is hastened by their use, and I have yet to see one case benefited or cured by their use. I believe that diphtheria and croup are clinically the same, whether the disease begins primarily in the larynx and extends upward, or in the pharynx and progresses downward. The youngest case intubated by me was four months and twenty-seven days, the oldest five years and six months; in all my cases peroxide of hydrogen was freely used.

Dr. DaCosta: I understood that the discussion was on croup, and not on diphtheria. The mode of onset, the symptoms, and the results of the two diseases are entirely different. Take a few points of differential diagnosis:

In croup the attack is more sudden, and the patient recovers more rapidly. In diphtheria the patient does not recover fully for weeks, and the attack is apt to be followed by paralysis, which we do not find in croup.

Diphtheria is contagious; croup is not. Croup is found in isolated cases: diphtheria attacks whole families.

But if we are going to talk about diphtheria, I would indorse peroxide of hydrogen. I know nothing that will clear off the membrane quicker than it will.

Dr. DeForest Willard: While there are such wide differences of opinion in regard to the pathology of these diseases, it is not strange that there should be these marked differences as to methods of treatment. Some of the speakers, perhaps, refer to one disease, while others refer to another. We all recognize that mild cases get well without much treatment, but there is another grade of cases which will die, whether treated medicinally, or by intubation, or by tracheotomy. Reliable inferences cannot be drawn from a small number of cases, and even in larger numbers we all know that we may have a hundred successive cases of recovery in a certain disease, while all of the next ten may die. This is especially true in membranous croup and diphtheria. I am confident that I have saved a good many lives by tracheotomy, but I have also lost many. Yet the comfort secured to the patient has amply repaid me, even though death has subsequently taken place.

Dr. Turner: I was led to write this paper from the fact that I knew that certain cases of spasmodic laryngitis were intubated and reported as cases of recovery from croup. The treatment which I have mentioned will decide the question whether the case is one of spasmodic croup or not. I also employ calomel, and use quinine in the form of the bisulphate in suppositories. It takes the membrane three or four days to be separated. It cannot always be removed by an emetic, but if you get rid of the spasm you give a great deal of relief. Asafœtida has not been used before in croup. I do not say that intubation and tracheotomy are of no use, but where the membrane is below the trachea and in the bronchial tubes, the case cannot be relieved by these measures. The treatment which I advocate gives to the child sleep, rest, and nourishment. Take a healthy child and treat it with emetics and the other things which have been mentioned, rousing it up every hour to spray its throat, and it would take a good constitution to stand that. Croup is not a very common disease. And in my paper I have referred not to diphtheritic croup, but to membranous croup.

In regard to the employment of calomel, I will state that I employ a purgative dose in the beginning of treatment, if constipation exists, to arouse secretions, and do not use it for its supposed action to dissolve the membrane.

J. M. Baldy, M.D., Professor of Gynecology in the Philadelphia Polyclinic; surgeon to Gynecean Hospital; Gynecologist to St. Agnes Hospital, read a paper entitled

CHRONIC ENDOMETRITIS.

Of late years it has become the habit of gynecologists to consider almost all endometrial disease as symptomatic, and not an independent lesion. It is certainly true that many pelvic diseases are accompanied by an unhealthy condition of the endometrium; especially in pelvic inflammatory disorders the lining membrane of the uterus is so frequently affected as to have given rise to the supposition that it is either caused by the pelvic disease, or rarely occurs independent of it. In fact, such assertions are frequently made in print and on the floors of our societies. The temptation is strong to accept this theory, which appears at first blush to be so plausible, but which is nevertheless most fallacious. My daily experience is teaching me that endometritis as an independent disease is quite a common disorder, and is at the bottom of many of the discomforts suffered by women. The causes giving rise to this disease are much the same as those which originate vaginitis, and particularly salpingitis—specific infection and post-puerperal sepsis being the most prolific, and giving rise to the bulk of the cases. Oftentimes the beginning of the trouble can easily be traced to a child-birth or to an abortion. The woman has had a slow get up, and will give the history of some fever, or she has regained her usual health very slowly, and possibly not at all; she will have complained of a vaginal discharge since her confinement, when previously she had been free from this annoyance. The history may be that of an attack of specific infection. Sometimes the history in such a case is clear—a sudden appearance of a yellowish vaginal discharge with swelling of the labia and burning micturition. At other times the evidence of specific infection is not entirely satisfactory, but it is quite notorious that women often become contaminated without giving it any particular attention, or the discomfort has been so slight as to be soon forgotten. In any event, if the disease be neglected and spreads to the cavity of the uterus, it soon spends its force and settles down to a chronic condition. It may or may not extend into the Fallopian tubes and cause a salpingitis and peritonitis. Should it do so, as is often the case, the removal of the appendages will not necessarily bring about a cure of the patient. In fact, this is the secret of the failure of laparotomy in many of the cases which are going from one clinic to another for relief. Even if the disease is complicated by pelvic disorders of an inflammatory nature, especially if the two arise from the same cause, it is well to first turn our attention to the endometritis, in which case a laparotomy may at times be avoided. In other words, certain cases embracing the two diseases, the symptoms from the endometritis may overshadow those from the salpingitis; this is especially true of many instances in which the intra-peritoneal damage has not been very serious. In these cases where the peritoneal inflammation has subsided, and only its products remain, the treatment of the endometrial inflammation, which, under these circumstances, is usually chronic, can be carried out with impunity if ordinary care be taken. Of course, in the event of there being an acute or even a subacute pelvic inflammatory condition present, great care must be taken not to interfere with the uterus in any way, else an already bad condition of affairs may be made much worse, and even serious. In many patients, in whom there exists post-puerperal septic endometritis or specific endometritis, the disease has stopped short of the tubes, and has not involved either them or the peritoneum. These cases are quite common, and are daily overlooked. The women wander from one doctor's office to another, and finally, when their money is all gone, into the public clinics, seeking relief in vain. It is often a matter of surprise to me that many of them have never even had an examination made, but have been treated for months and years with drugs, or have been advised to use an injection of hot water. The hot water injections as usually given are worse than useless. Just sufficient water at a moderate temperature is used to cause a congestion of the uterus and pelvis, which congestion is not relieved by the secondary effect of the hot water, *viz.:* the contraction and consequent driving away of the blood from the parts. These women suffer from a continual uterine discharge more or less profuse; there is, perchance, a feeling of weight and heaviness in the pelvis, accompanied by backache; sometimes they feel weak and worn-out. The menstrual function is disordered, being generally irregular and profuse; pain may or may not attend this function. These symptoms exist either alone or in various combinations, the only constant and reliable one being the uterine discharge. A local examination discloses an enlarged and heavy uterus, from the cervical canal of which an unhealthy thickish discharge is oozing. Oftentimes the cervix is eroded, and the mucous membrane of the everted lips, if the lips be everted, bleeds on being touched with a piece of cotton or an instrument. This hæmorrhagic condition is more apt to be present when the disease is still acute or subacute; but, nevertheless, it is at times seen in the chronic cases. In some instances the uterine body is comparatively normal to the touch so far as its consistency is concerned; again, it may be either too soft, or, what is more common, extremely hard, and even almost fibrous in character. These changes indicate that the disease is not altogether confined to the endometrium, but has invaded the structures comprising the uterine wall. It is no uncommon thing to see an endometritis and a metritis coexisting; in fact, in chronic cases it is rather the rule than the exception. The disease is almost always primarily an endometritis, and treatment which will cure this affection will be followed by a cure of the metritis almost as a matter of course. So much is this the rule that I have gotten to look on these two diseases as very much one and the same.

Where this condition of affairs exists—a large and abnormally heavy uterus—there is very apt to be a retro-displacement of the womb sooner or later. Whether or not all displacements which give rise to trouble are originally caused by uterine inflammations, it is a curious fact that it is a very rare thing to find a troublesome retro-displacement without either uterine or pelvic inflammatory disease complicating it.

For the treatment of uncomplicated endometritis and metritis there are a variety of remedies, some of them quite effective, while many of them are useless, and are applied in a haphazard way. My own preference is to adopt the shortest and surest course of procedure. The woman is put under ether, the cervix is dilated, and the uterus thoroughly curetted; the uterine cavity is then washed out, and an application of Churchhill's iodine made to its surface. If there is pretty free bleeding in consequence of these manipulations, the uterus is packed full of iodoform gauze, which is removed in the course of a day or two, as circumstances demand. Ergot may or may not be given by the mouth, the indications for its use being hæmorrhage or an enlarged heavy uterus. Usually, I give ½ drachm of the fluid extrac three times a day for a short period, gradually reducing th quantity until it is dispensed with altogether in about a week.

As to the steps of the operation: The patient is placed the dorsal position, the dilatation is made with the Goodel rapid dilators, after careful antiseptic precautions. I dilat usually only sufficient to introduce and manipulate my instruments easily—from ¾ of an inch to 1 inch. Great care is taken to make the curettement a thorough one. All débris can be washed away, and the cavity cleansed by the use of the rectal nozzle of a Davidson syringe. The application of iodine follows immediately, it being applied with a long-nozzled uterine syringe. The patient is now returned to bed, and nothing more is done for a week or two, excepting to give absolute rest, hot water injections, and keep the bowels soluble, together with the ergot as indicated. I have not found the occasion to place a hard rubber drain in the uterus, as Wylie does, nor to pack it with iodoform gauze for a prolonged period, as Polk proposes. I find, if my dilatation has been properly made, that the cervical canal remains sufficiently patulous for the necessary drainage. The uterus will resent in one way or another the presence of a foreign body, and these procedures can only result in just so much more irritation and consequent discharge.

Some patients are cured altogether by this treatment, but, for the most part, in order to secure a thoroughly satisfactory result, treatment must be kept up for some little time after the woman is allowed to get out of bed. It is my habit in these cases, to make an intra-uterine application of iodine about twice a week for a few weeks, then once a week, and finally to withdraw the treatment altogether. The hot water injection should be kept up twice a day throughout the whole course of treatment. It is not uncommon, where the endometrium has undergone a fungoid change, for the disease to return, and the whole treatment has thus to be gone through with a second time.

Many patients will not submit to this treatment, in which event it becomes necessary to resort to other methods of management. A prolonged course of intra-uterine treatment will, in many cases, eventually bring about the same result. I do not maintain that iodine is the only remedy to be used for this purpose, but I have come to use it routinely for the reason that I have found no other drug which would give better results. It is not advisable always to use it in full strength, in which case it may with advantage be diluted with glycerine in the required proportions. Ichthyol and all similar substitutes have only proven disappointing.

So much for the uncomplicated cases of endometritis. Where the disease is accompanied by a pelvic inflammatory condition the first question to settle is whether or not an abdominal section is to be performed for the removal of the appendages. If they are not sufficiently affected to call for the operation, and if the uterine symptoms predominate, and are very annoying, I have no hesitation in treating the uterine cavity. A long-nozzled uterine syringe may with safety be passed into the uterus, even in the presence of considerable pelvic disease, and a local application thus made. In these cases the strength of the material injected should be regulated by the amount of inflammation, as a strongly irritating fluid will be much more likely to cause trouble than the mere passage of the instrument itself. When the pelvic disease has been an old one and quiescent I have not hesitated in gently dilating the cervix and curetting the cavity of the uterus, nor have I ever had any trouble follow such a procedure. In this class of patients there is an opportunity for the nicest kind of judgment, and if one be skilful and careful in selecting the proper cases the treatment may be followed by the greatest benefit. I am perfectly well aware that this is contrary to the teachings of many gynecologists of the present day, but my own experience in these matters has opened my eyes to the fallacy of such ideas. If the gentlemen opposing the practice of intra-uterine treatment would try it on some of their cases who continue to have enlarged uteri and a vaginal discharge after the removal of the appendages they would soon become convinced of its practical value, even in these cases.

The treatment of endometritis by electricity I have not touched upon, not that I do not approve of it, but because Dr. Massey follows me with a paper on that subject. It is especially valuable in those cases which refuse the above line of treatment.

(*To be concluded.*)

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SATURDAY, MARCH 5, 1892.

THE INDICATIONS.

In recent issues we have published announcements from several section officers of The American Medical Association, which of themselves go to show the coming meeting to be full of scientific interest.

The American Lancet, published in Detroit, says:

> The following committees will attend to the arrangements for the meeting of the American Medical Association in Detroit in June:
>
> *Executive.*—H. O. Walker, Chairman; F. W. Mann, Secretary; T. A. McGraw, J. H. Carstens, Leartus Connor, Donald Maclean, C. G. Jennings, David Inglis, E. L. Shurly, H. W. Longyear, H. F. Lyster.
>
> *Registration.*—David Inglis, Chairman; C. W. Hitchcock, Angus McLean, S. G. Minor, Don M. Campbell.
>
> *Finance.*—E. L. Shurly, Chairman; J. B. Book, S. P. Duffield, E. A. Chapoton, J. E. Clark, W. P. Manton, Charles Douglas.
>
> *Entertainment.*—Donald Maclean, Chairman; H. A. Cleland, T. A. McGraw, G. A. Frothingham, Eugene Smith, C. J. Lundy.
>
> *Transportation, Hotels, etc.*—H. F. Lyster, Chairman; W. G. Henry, A. E. Carrier, O. S. Armstrong, W. F. Metcalf.
>
> *Reception.*—Leartus Connor, Chairman, Detroit; G. A. Frothingham, Detroit; *C. G. Jennings, Detroit*; E. W. Jenks, Detroit; Hal C. Wyman, Detroit; Carl Brumme, Detroit; G. W, Stoner, Detroit; A. W. Alvord, Battle Creek; J. Avery, Greenville; H. B. Baker, Lansing; E. O. Bennett, Wayne; Lyman Bliss, Saginaw; E. H. *Pomeroy, Calumet*; G. E. Ranney, Lansing; Chas. Sheppard, Grand Rapids; J. M. Snook, Kalamazoo; C. B. Stockwell, Port Huron; Eugene Boise, Grand Rapids; Fleming Carrow, Ann Arbor; E. P. Christian, Wyandotte; *W. H. Decamp, Grand Rapids*; Geo. Dock, Ann Arbor; S. S. French, Battle Creek; J. B. Griswold, Grand Rapids; F. J. Groner, Grand Rapids; W. J. Herdman, Ann Arbor; G. K. Johnson, Grand Rapids; T. J. Langlois, Wyandotte; H. D. Thompson, Albion; A. A. Thompson, Flint; V. C. Vaughan, Ann Arbor; G. V. Voorhees, Coldwater; R. LeBaron, Pontiac; C. H. Lewis, Jackson; Kate Lindsay, Battle Creek; H. McColl, Lapeer; W. C. McHench, Brighton; H. R. Mills, Port Huron; J. D. Munson, Traverse City; R. N. Murray, Flint; A. W. Nichols, Greenville; J. D. North, Jackson; *P. D. Patterson, Charlotte*; D. C. Wade, Holly; D. E. Welsh, Grand Rapids; H. Williams, Saginaw; D. H. Wood, Quincy.
>
> *Place of Meeting of Sections.*—J. H. Carstens, Chairman; J. F. Mulheron, J. E. Emerson.
>
> *Information.*—H. W. Longyear, Chairman; W. B. Sprague, C. P. Frank.
>
> *Exhibits.*—H. O. Walker, Chairman; F. W. Mann, C. G. Jennings.
>
> *Printing.*—Geo. Duffield, Chairman; C. H. Leonard, W. R. Chittick, L. E. Maire.
>
> *Railroad Depot.*—B. P. Brodie, Chairman; D. L. Parker, F. W. Robbins.

One thing in the above announcement is brimful of suggestiveness, viz.: The reception committee is not only numerically large, but geographically takes in many prominent members of the profession from different parts of the State of Michigan.

The idea is a grand one, of having the members of the American Medical Association made the guests of the profession of a great State like that of Michigan. The very thought of such an occasion should and will send a thrill through every other State, that will call together at least five to six thousand delegates.

The section officers are live working men and preparing their feasts of lore, while the profession of one of the largest States in the Union is engaged in the preparation of social enjoyments that we are sure will rival royalty in munificence and be dispensed with a whole-hearted, whole-handed hospitality, known only to Americans.

Local societies are now active and many of them will very soon elect delegates to the ensuing meeting. Let every one who can do so, begin to make arrangements for attendance on this meeting. Detroit is a beautiful city. Hotel accommodations are ample, and the hospitable string attached to the door latchets of the homes of the people of Michigan are all made to work from the outside.

We have the honor of a good large acquaintance in Michigan, and know enough to know that all we have said is true, and that the doctor who doesn't go to the next meeting of the American Medical Association will miss an occasion for which he will have just cause to lament during the remainder of his years.

COTTAGE-HOSPITAL OR ASYLUM CURE FOR EPILEPTICS.

At Wilhelmsro, in Sweden, there has recently been established the nucleus of a refuge for epileptic children. At present there are twenty inmates, most of them rescued from depths of neglect and privation, if not of cruelty. Some of the children, when admitted, were little better than skeletons and brutalized by the treatment they had undergone. The methods of caring for these children, about one-half of whom are idiotic or deficient, is that of the French homes at Laforce. As soon as practicable the idiotic members of the family will be cared for in a building apart from the less unfortunate class. The training of each class will be carried out on lines appropriate to each. As the work and means progress, there will gradually be here built up an epileptic farm-colony, the like of which exists at thirteen or fourteen different localities in Europe. At Baldwinsville, Mass., exists the only institution for epileptic children in this country. This is composed of a series of cottage homes, accommodating about eighty patients, who are mostly from the families of the poor, and who must be maintained and educated at the expense of the State, aided by private charity. It is stated in the *Medical News* that at Gallipolis, O., a second epileptic retreat has been inaugurated; but whether for children or adults, for charity or for pay-patients, the scope and details of the undertaking are not known. Besides these two, we believe there is no institution of relief or training distinctively formed for epileptic unfortunates anywhere in English-speaking countries. Great Britain is said to have none, and no systematic movements are known to have been made in that direction. Two hospitals exist in London for epileptics, paralytics, and other neuropathics. There are none for epileptics as a separate class.

Efforts have been made in New York and Massachusetts to secure legislation which would differentiate unfortunates of this class from lunatics on the one hand, and from county paupers on the other hand. The commingling of epileptics with the insane is beneficial to neither class. The insane are injured by the excitement of viewing one of their companions in the throes of epileptic seizure; and the victims of the latter disorder during the period of release will often account themselves doubly aggrieved — first, by nature in their distressful malady, and secondly, by society in shutting them up as companions of the demented. Furthermore, the aimless and indolent life of the asylum is detrimental to many young epileptics, occupation being to them prophylactic and beneficial. It has been repeatedly demonstrated that an enforced idleness, in the case of an epileptic, formerly suitably employed, has appeared to aggravate his malady. We have all heard of the "Sunday epileptic," and the explanation has been accepted as plausible that on that day, the patient being unoccupied, the "discharge" of corticle nerve-energy vented itself aimlessly in a fit, rather than in an orderly manner by means of work, as on week-days. The theoretical averment has been made that work will oftentimes (not always) operate as a "safety-valve" when the cerebral instability is functional rather than "essential," or due to gross lesions. Apart from any theoretical or debatable proposition, very tangible proof comes to us from Germany respecting the benefits of a systematic care, training, and employment of these unfortunates.

We refer especially to the farm-colony of PASTOR VON BODELSCHWINGH, of Bielefeld, near Hanover, and other like undertakings that have followed in its wake. There are at least nine others in Germany, and one each in Holland, France and Switzerland; and one now commencing in a tentative way in Sweden. The institution at Bielefeld is the marvel of one man's work—the joint product of enthusiasm and true philanthropy. It was begun in a small way twenty-five years ago; the Lutheran pastor above named was led to see the needs of this apparently neglected class as no one before him had been impressed by them, and he set before himself the truly noble task of building up a refuge for the afflicted of his parish, where medical care and industrial training could go hand in hand. The beginning was made with less than a dozen patients. At the present time there are upward of a thousand epileptic colonists cared for in various departments. There is a farm of 300 to 400 acres, with fifty to sixty cottages and other buildings, situated amid gardens, meadows and woodland. It has much the appearance and many of the shops of a tidy country village. There are schools and stores, a printing and binding establishment, a dairy, brickyard, saddlery and foundry. The epileptic colonists carry on the various trades necessary for the building and fitting of houses; some thirty different branches of work for the males alone. The female patients have the household work, horticulture, spinning, weaving and tailoring as their principal occupations. Much of the work, both of the female and male divisions of the colony, is done well and contributes to the support and growth of the institution. Some of the inmates are of course able to produce more than others, but they all become here more productive than they possibly could be at their homes. In their homes, rather, it might be expected that they would be a drag and a drain upon the other members of their families. A large proportion of these latter are in poverty and absorbed in their individual struggles for existence. Even in the homes of those who are well-to do, there must be wanting some of the training advantages which are prominent in a relief colony like that of PASTOR VON BODELSCHWINGH. Only the experience of years could teach in matters of internal administration, such as economy and thoroughness in the employment of nurses and safeguards. It has been found, for example, that one hundred cases may with safety be grouped in one dormitory, and that groups of this size can be watched both night and day. There is a sick-ward, or infirmary, near at hand, into which any urgent cases can be removed without delay. The beds in the dormitories are only a foot in height, so made for the purpose of minimizing the effects of falls during nocturnal seizures if the night-watch fails to reach the patient's bedside in good season; and so on in regard to many details.

It is not to be expected that every new colony can begin with all the aggregated advantages that now cluster around the matured system at Bielefeld. The public, in this country at least, requires to be educated up to the necessity and humaneness of a large special provision to be made for epileptics. And then men strong in executive ability must be found or developed for leadership in colony-formation of the kind above indicated. We verily believe that, when the time fully arrives, there will be both money and men at command sufficient for an enlightened care and tutelage of this now neglected class. One way that is open to the education of the people in this important matter, is the yearly introduction of bills in the various State Legislatures for the especial benefit of the epileptic. These bills will probably not pass the first year, but by "saintly iteration" they can eventually be made winners. A very modest bill was introduced last year before the New York Legislature, but it failed of passage: it will doubtless be renewed. That bill was simply "an entering wedge," and called for a minimum appropriation of $10,000, for the blocking out of a refuge which might, in the course of time and by gradual accretion, grow to accommodate one to two thousand epileptics and epileptic insane. A commission of three experts was provided for, whose duty it should be to select a site of about 300 acres, and to obtain plans for a certain number of cottage-hospitals, with shops, school-rooms, infirmary, pathological laboratory, dairy and outbuildings, suitable for agricultural and horticultural purposes. The bill further provided that the permanent government of the institution should be vested in a board of seven managers, to be appointed by the Governor of the State. There probably is no State in the Union—except two or three of the very smallest—that has not an epileptic population claiming the protection, development and training contemplated in that kind of proposed legislation. This seems to us the one great charitable object in regard to which the present generous generation has been remiss. Nearly every other known creature of suffering except the epileptic has his asylum, home or retreat; and this omission arises because our subject has been wrongly classified in the social categories. He has been placed either with the lunatic or the pauper, when he may be neither; although he may become both by the force of his environment. The State owes a duty to this misclassed citizen. Private philanthropy has a duty also, if the State continues negligent; and the institution at Bielefeld shows how nobly and effectively that duty can be fulfilled, when the right man takes the helm.

"OPEN" AND UNWHOLESOME FEBRUARY.

February is a month with few friends. Those ancients who made for us the calendar showed very little respect for it, judging from their manner of cutting it down as closely as they could. February stands between winter and spring—neither one thing nor the other—a kind of go-between, makeshift and after-consideration. It was not always thus, for if we can pin our meteorology of former days to Shakespeare, February was once a good, honest winter month in England. That keenly observant bard described the month as being "full of frost and storms and cloudiness," a genuinely hyematic state of things. And we ourselves have in our boyhood days seen Februaries when we could go sleighing and skating, and we could then say to one another that winter sports must in that month be taken in to their utmost, by recalling the adage, "February is a bridge but March breaks it." Now, however, how different it is in the freezing and thawing—an open February seems to be the rule—supplemented perhaps by terrible March blizzards. England this year has had its February blizzard with a stoppage of traffic, but last year it had but little inclement weather. A year ago, *The Lancet* had some observations on the changing characteristics and unseasonableness of our second month, which will this year be more relevant here than on the other side of the ocean. The *Lancet's* remarks turned on the probable influence of a phenomenally mild winter—or considerable part thereof—upon the ensuing spring and summer, and claimed the existence of a "law"—bye-law, more properly, we would say—that seems to underly all the apparently erratic evolutions of the weather. This law is, that sooner or later the average of temperature and rainfall will be evened up. Exceptional excess or deficiency on one side will, before long, be balanced by other proportionate defects or excesses upon the other side. We have our heat and cold, our dry seasons and our wet ones, but the balance is very certain to be adjusted and the average made up. The writer in the *Lancet* thus continues: "Experience certainly shows that a very mild January and February are not unfrequently succeeded by a very severe March, but no general law beyond that which we have just indicated can be said to exist. That a fine February is a bad augury for the rest of the year is a belief which finds expressions in various popular saws: such as 'February fine and clear makes two winters in one year;' or, 'All the months in the year curse a fine February.' These saws have just this amount of foundation—that if the winter be unduly mild and dry, there is a probability that the spring may redress the balance by partaking of an exceptionally wintry character."

With the lengthening of the day, that is so perceptible in this month, there begins a decrease in the winter mortality, moving gradually northward from the Gulf States and the Mediterranean. In this way "the backbone of winter" begins to get broken. Even before the face of Nature brightens, the bills of mortality begin to grow lighter, and the vernal renewal of human life approaches; our subtropical neighbors being the first to be favored. All these considerations remind us that the world is both long and wide. To the south of us, and in Southern Europe, in Italy especially, the popular mind reverts each February to the mating of the birds, the sending of valentines and the consultation of the marguerite-daisy's petals. Outside of the conservatories, this climate yields very few marguerites for maidens to dissect leaf by leaf. The land of St. Valentine, the match-maker, would serve better in that respect. Or the south of France might answer, where dwelt that jovial soul the king of Yvetot, whom Béranger brought to light, *Roi, peu connu dans l'histoire*, the match-making king whose delight it was to see the baby crop a-blooming. He held that he was a member of the Valentinian family, by a side branch, and should be remembered about the middle of the second month. Perhaps we owe it to the denizens of those warmer districts that the notion has gone abroad that the daisy is the flower belonging to the month February; in our own literature it has rather a "previous" or strained appearance.

EXPERT MEDICAL TESTIMONY IN JURY TRIALS.

Recently the public have been treated to several new farces of the old superstition of grouping medical men on two opposite sides of a disputed case in court, involving questions of science.

The lawyers acting as generals, lead the experts up to conflict, enthused with the idea that the truth is the great object of the struggle. In reality, both sides care nothing for the truth; winning the case is paramount to every other object. The expert physician is seductively drawn up to make statements, then driven to retract or qualify them, and pressed to perjury, or so near it that it will be difficult to draw the line. Insulted and prevented from giving only a part of the facts, especially those which favor one or other side of the case, he is made to give a jumbled, confused mass of half truths and facts open to question, and explanation; and never permitted to give clear, straightforward, common sense views, or statements of the meanings of facts in their scientific sense. Both sides avoid informing the jury, and are always eager to deceive them.

The jury find themselves suddenly raised to an exalted position with no other qualification than that of profound ignorance of the case in court, coupled with general stupidity on all other questions, and inability, with disinclination, to form or give an opinion of any passing event.

Thus, the lawyers, judge, and jury are as uncertain as the shifting winds, and the entire scene is a comical farce. In one of the late battles of this kind, a large array of medical men were pitted against each other to determine the "old, old story" of boundary lines between sanity and insanity. Statements and counter-statements were hurled back and forth; authorities, both medical and legal, were quoted, praised and condemned. Theories a thousand years old were repeated as the latest facts in science; questions of physiology and psychology that are unanswerable from any present scientific knowledge, were treated with a familiarity and positiveness that was startling. The judge reviewed the case, and charged the jury with a grotesque assumption of knowledge, which, if he possessed, would have made him the most distinguished man on earth.

Thus the attempt to bring out expert medical testimony in the law courts of to-day, by the present *battledoor and shuttlecock methods*, is a disgraceful failure. If medical men would refuse to go on the stand as expert witnesses, and submit to the questioning of lawyers who want half truths or falsehoods that bear on their side of the case, some new method would be devised. All medical expert testimony should be given in written answers to questions. These answers should be long and judiciously considered, and explained clearly. Then an expert judge should try such cases, and review the testimony of the witnesses at length; having ample time to confirm or disprove the statements of such witnesses. Cases where the issue turns on a scientific knowledge of the facts should never be given to a jury of non-experts.

The late disgraceful exhibition of medical experts who are hired like horses to drive so far, and in such and such directions, with the proper harness and appointments for one purpose alone, is not a cheerful scientific aspect. No wonder most of the medico-legal writings and literature of the day are but fog banks of paid theories and opinions. The boast of some secular papers, that it is possible to buy medical opinions of every character and description, has some shadow of truth. This is an error for which the profession are more or less responsible. The fault is that physicians are not independent thinkers and teachers of public opinion. They are followers, and shrink from making statements opposed to popular sentiment. In the court-room the same shrinking from any statement that is in conflict with some legal opinion, is often noticed. Medical men should always teach both judge and jury, and never be led by them. Obviously a great field for change and improvement is opening up in this direction.

CHLOROFORM AS AN ANÆSTHETIC.

Notwithstanding the labors of the Hyderabad Commission, and of other scientific investigators, and the extensive clinical use of anæsthetics, it is certain that the relative merits of the two principal agents used to produce anæsthesia, are far from settled. While ether is so largely used in America, a word from one who has used chloroform extensively, and almost exclusively, during a period of forty years, can hardly fail to be of interest.

Dr. Lombe Atthill[1] commenced the use of chloroform in 1851, when assistant to the Master of the mous Rotunda Hospital of Dublin. During his ssistantship, and afterward when Master, he used is anæsthetic in all cases of difficult or complex bor, and in many other cases, merely to relieve uffering. He estimates that he has thus used chlooform in midwifery cases, at least 3,000 times, and ithout a single untoward result. He has also used in his gynecological practice, putting the number f times at 2,000, but stating that it was probably wice as many. Whatever be the exact number, it is ertainly great. Of these latter cases one died under he anæsthetic, but the circumstances of the death ere so peculiar, as to make it uncertain whether the hloroform was indeed its cause. The patient had a arge ovarian tumor, and after taking a few whiffs of he chloroform, she ceased to respire. Artificial resiration was at once resorted to, and seemed about o accomplish the desired end, when, through the suggestion of a bystander, the head was lowered, and the hips raised, thus throwing the heavy tumor gainst the diaphragm. No respiration subsequently ccurred. The heart continued to beat after respiation had ceased.

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[1] British Medical Journal. January 16, 1892.

For a period of three months during his mastership, he used ether in his gynecological cases. Durng this time four deaths occurred which he ascribed o the ether, but it must be confessed that this is by no means certain, and that in blaming the ether he was not as fair to it, as he was to the chloroform, in the one fatal case which attended its use. Dr. Atthill regards chlorform at least as safe as ether, if the following conditions be observed: 1st. The chlorform must be pure; 2nd. It must be administered from an inhaler which will permit the admixture of an abundance of air; 3d. The anæsthetizer must pay strict attention to the pulse and respiration, and ignore the operation itself; and 4th. The needful degree of anæsthesia must be steadily maintained.

OPIUM SMOKING.

So much has been written of the evil effects of opium smoking, that the paper of Surgeon-General Sir Wm. Moore[1] comes somewhat in the nature of a surprise.

Opium smoking is not to be compared with opium eating. The opium is first prepared in such a manner as to deprive it of much of the narcotine. This prepared opium or "chaudul" is put into the pipe and brought into the flame of a small lamp, and the effect of the combustion is to destroy much of the active principle of the drug. Some of the morphia is sublimed and is deposited in the stem of the pipe. Sir George Birdwood concludes that nothing passes from deflagrating chaudul pill into the lungs but the volatile resinous constituents of the opium. Brereton says opium smoking is not only innocuous, but positively beneficial to the system. It is a complete preservative against drunkenness. Also that it is altogether exceptional to find an inordinate smoker. Agnew has known hundreds of smokers who never showed any decadence whatever. Birdwood states that opium smoking is a strictly harmless indulgence.

The typical sensational opium smoker with "emaciated appearance, lank and shriveled limbs, tottering gait, sallow visage, feeble voice, and general imbecility," seems to be rare in China and India. Brereton, who was long a resident in China, sought in vain for them. Such results from the excessive use of the drug unquestionably occur, but Dr. Eatwell, who passed some years in China, stated that the effect of the abuse of opium is not very frequently observed. Many Rajpoot men who ride forty and fifty miles daily on camels, and who are hale and hearty, have used opium all their lives.

Even when used to excess opium does not lead to the noisy brutality produced by over-indulgence in alcohol.

He claims for opium many benefits, principally, its power of sustaining strength, and its prevention of the grosser alcoholic indulgence.

ELIMINATION OF TOXINES IN ENTERIC FEVER.

The toxicity of the urine is shown by its power to kill lower animals when injected subcutaneously. The average quantity found necessary to kill a rabbit of given weight, determines the normal uro-toxic co-efficient. This toxicity is a measure of elimination by the kidneys. MM. Roque and Weill,[1] of Lyon, have recently used this method in studying the elimination of toxines in enteric fever. First allowing a typhoid patient to proceed entirely without treatment they found that the uro-toxic coefficient was doubled, which may be accepted as fairly representing the unaided efforts of nature in this disease. But that this effort is insufficient is shown by the fact that toxicity of urine remains above normal for four or five weeks after the cessation of the fever. In patients treated by cold baths the uro-toxic coefficient becomes enormously increased, reaching five or six times the normal figures. This hypertoxicity decreases as the fever abates and the symptoms improve, and it reaches normal with the cessation of the fever. This indicates clearly that the cold bath is an eliminative treatment, and accords with the clinical observation of rapid convalescence after the use of this method.

Antipyrine, on the contrary, produces the opposite effect, and under its use the uro-toxic coefficient is diminished almost to that observed in health. This effect may have several explanations. Either the antipyrine acts as a direct antidote, preventing the formation of toxines, or it hinders their excretion, or it postpones their formation. After the use of antipyrine the discharge of toxines is found to be enormously increased during the first week of convalescence. Further observations will be necessary to show how far each of these contingencies above mentioned result from the use of the antipyrine. **Teissier** has made similar experiments to determine the action of naphthol, and his investigations show that this substance is a true antiseptic, and hinders the production of toxic substances during both the disease and convalescence.

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[1] The Provincial Medical Journal, February, 1892.

[1] La Gazette Médicale de Montréal, December, 1891.

U. S. Marine-Hospital Service.—A board of officers will be convened in Washington, May 2, 1892, for the purpose of examining applicants for admission to the grade of Assistant Surgeon in the U. S. Marine-Hospital Service.

Candidates must be between twenty-one and thirty years of age, graduates of a respectable medical college, and must furnish testimonials from responsible persons as to character.

The following is the usual order of the examination: 1, physical; 2, written; 3, oral; 4, clinical.

In addition to the physical examination candidates are required to certify that they believe themselves free from any ailment which would disqualify for service in any climate.

The examinations are chiefly in writing, and begin with a short autobiography by the candidate. The remainder of the written exercises consists in examination on the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and the natural sciences.

The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on the cadaver.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order, as vacancies occur.

Upon appointment the young officers are, as a rule, first assigned to duty at one of the large marine hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco.

After four years' service Assistant Surgeons are entitled to examination for promotion to the grade of Passed-Assistant Surgeon.

Promotion to the grade of Surgeon is made according to seniority and, after due examination, as vacancies occur in that grade. Assistant Surgeons receive $1,600, Passed-Assistant Surgeons $1,800, and Surgeons $2,500 a year. When quarters are not provided, commutation at the rate of $30, $40, or $50 a month, according to grade, is allowed.

All grades above that of Assistant Surgeon receive longevity pay, 10 per centum in addition to the regular salary for every five years service, up to 40 per centum after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For further information, or for invitation to appear before the Board of Examiners, address

(Signed) Walter Wyman,
Supervising Surgeon-General, M.H.S.

The Annals of Surgery will hereafter be published in Philadelphia.

SELECTIONS.

The Register-General of England and Wales says that the epidemic influenza of 1890 killed twenty-seven thousand people in those countries.

Sick Headache.—Sulphite of sodium in five-grain doses, repeated three or four times daily, is a frequent cure for this distressing complaint.

The best vehicle to keep bismuth in solution is pure glycerine. This conclusion was arrived at after experimenting with various other substances.—*Med. Tribune.*

Deafness.—In deafness resulting from dry catarrh of the middle ear, Dr. C. Miot has seen good results from instillation of liquid vaseline. He has never seen this method produce new growths of the tympanum, as is feared by some authorities.—*Gazzetta degli Ospitali.*

Ichthyol in Erysipelas.—Dr. Julius Fessler, of Munich, claims to have had excellent results in the treatment of erysipelas by means of ichthyol internally and externally employed. It is, he says, inimical to the life of the streptococcus, thereby curing the disease in a few days.—*Medical Record.*

New Operation for Hernia.—Lawson Tait has devised a new operation for the radical cure of hernia in every variety. It is: Median abdominal section. The intestines are to be drawn up from within, and the ring carefully closed on the inside with silk-worm gut sutures.—*Kansas City Medical Record.*

Donovan's Solution in Gleet.—The solution of the iodide of arsenic and mercury is said to be of material service in the treatment of gleet. A correspondent of the *Medical Record* feels that he is justified in calling this remedy almost a specific for gleet, so uniform has been his success with it. It should be given for this purpose, in doses of ten minims, three times daily.—*Kansas City Medical Record.*

Bed-sores.—Dr. Keen says that an excellent treatment for bed-sores is the alternate application of cold and hot poultices. Apply a cold flaxseed poultice in which have been placed small pieces of cracked ice; let this remain for ten minutes, and then apply a hot flaxseed poultice. After two hours apply another cold poultice and then another hot one.—*College and Clinical Record.*

Rhus Aromatica is a valuable remedy in enuresis of children; dose, from five to ten drops three times a day of the fluid extract. It will also sometimes cure what is believed to be diabetes. Its exhibition in small doses three times a day will steadily decrease the amount of urine passed, and relieve the inordinate thirst. It is the remedy for hæmorrhage of kidneys and bladder.—*Med. Tribune.*

Prescribing Opticians.—Ophthalmologists in this country will be ready to congratulate, while yet they envy, their brethren in France, in view of a recent decision of a court in Havre. The judge ruled that an optician who gives a patient advice as to the condition of his eyes and prescribes glasses to remedy defective vision is guilty of the illegal practice of medicine, just as if he had ordered remedies or given medical advice without possessing a diploma recognized by the law.—*Medical Record.*

Typhoid Bacilli in Drinking Water.—Kamen (*Centralbl. f. Bakt. u. Paras.*, January, 1892) refers to the difficulties experienced in demonstrating typhoid bacilli in water before the addition of carbolic acid solution to the culture was suggested, with the object of limiting the development of other microörganisms also present. According to Pariotti, one to ten drops of the water to be examined are added to 10 ccm. f neutral bouillon, with three, six or nine drops of carbolic cid solution (carbolic acid 5 g., pure hydrochloric acid 4 g., istilled water 100 g.). This is kept at 37° C., and, if it beome turbid, it is almost certain to contain typhoid bacilli. n a small epidemic of twelve cases occurring in a regiment, he author was able to exclude other possible sources of inection except drinking water. This latter he examined ifter Parietti's method, and ultimately obtained a pure culivation of typhoid bacilli. The only way these bacilli beaved atypically was in their mode of growth upon potato, ut this has been noted by others. Their behavior was like hat of typhoid bacilli obtained from other sources, and the nicroörganisms obtained in a pure cultivation from the pleen of one of the fatal cases were identical with them. Kamen says that this is a striking example of the propagaion of enteric fever by drinking water. About six months reviously there had been several cases of enteric fever among the civil population, but no direct connection could e traced between these and the author's cases.—*Brit. Med. Journal.*

The Treatment of Hæmoptysis.—Professor H. Nothnagel publishes in a Vienna medical journal an interesting paper on the treatment of hæmoptysis. The first thing, he says, is absolute rest. If the loss of blood is at all serious, the patient must not utter a sound; if it is necessary he should speak, he must only whisper, or better still, write down everything he wants to communicate. He must not be allowed to see visitors, and the sick-room must be kept at an even temperature. The patient must take nothing warm, nor anything likely to excite or irritate. The best food for the first two days is cold milk. Regular diet may then be resumed gradually, but all food which might increase the action of the heart must be avoided in future. Formerly an opinion prevailed that the patient should be allowed to cough, the retention of the blood being supposed to be hurtful, as it was believed that tuberculosis was a consequence of hæmoptysis, but this opinion is quite erroneous. On the contrary, one of the first indications is to suppress all inclination to cough as much as possible, for which purpose morphia is the best remedy. Should the hæmoptysis not cease, other remedies must be applied. The author first mentions those remedies which ought to be eschewed, and the use of which is occasionally a physiological error. The first to be banished is perchloride of iron, the action of which on the blood is to cause it to coagulate and to form a thrombus. In the form of inhalation it would be simply useless, but for the great danger in allowing a patient suffering from hæmoptysis to draw a deeper breath than absolutely necessary for respiration. The liquor ferri, if administered internally, is, according to some, not absorbed at all, but, even if it be so, it would only tend to increase the hæmoptysis. The same may be said of tannic acid and of alum, which contract the blood-vessels only when diluted to one-sixth per cent., and are consequently useless for hæmostatic purposes, as well as for inhalation. The author dispenses altogether with inhalation in hæmoptysis. The only two hæmostatic remedies he recommends as useful are ergotine and acetate of lead; the first may be used internally and in hypodermic injections, the latter may be given in conjunction with opium. Another remedy which he mentions, but of which he has himself no experience, is hydrastis canadensis. A few years ago hypodermic injections of atropine were recommended, and Prof. Nothnagel has occasionally seen them effective. No objection can be raised to half a teaspoonful of common salt when no other remedy is at hand. Hæmorrhage from the lungs is certainly sometimes arrested by its use, but the author is not quite sure if the success is *post hoc* or *propter hoc*. Nor is he certain whether, as supposed by some, a reflex irritation of the pulmonary vessels takes place. This theory is certainly physiologically feasible, as recent experiments have shown that sensory excitement in some parts causes the blood-vessels in other parts to contract. An application of ice, for instance, to the abdomen, causes anæmia of the mucous membrane of the larynx. A very common remedy is the application of cold; but the ice-bag is, according to the author, of very doubtful value, as it is impossible to assume that the cold acts directly on the bleeding surface, for we do not know to what depth it penetrates. If the cold does act hæmostatically, the effect must be due to irritation of the skin. Professor Nothnagel warns us, however, that in some people the application of cold to the thorax causes cough, which is far more dangerous than the doubtful contraction of the blood-vessels can be useful. An extreme and heroic remedy is venesection. It is a well-known fact that wounded soldiers faint from loss of blood, when the hæmorrhage immediately stops, and a similar observation has been made in metrorrhagia and hæmoptysis.—*London Lancet.*

Disinfection of the Hands.—Dr. H. A. Kelley, after giving the details of a large number of experiments made by himself and his associates, gives the following conclusions as to the best method of disinfecting the hands:

Scrubbing the hands, with especial attention to the nails, —not more than one millimetre in length—for ten minutes in water, frequently changed, at about 104° F. Immersion of the hands in a solution of permanganate of potassium, made by adding an excess of the salt to boiling distilled water, until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized and of a healthy pink color. Washing off the oxalic acid in warm sterilized water.

By this simple process the hands are rendered more nearly absolutely aseptic than by any other known means.

The author has found that it is impossible to get rid of staphylococci by scrubbing the hands and nails from ten to twenty-five minutes with a sterilized brush, soap, and water, temperature 104° F. The bichloride of mercury solutions as used, up to 1 : 500, are not germicidal, as supposed. Previous erroneous conclusions as to the efficiency of the bichloride are shown to be due to an inhibiting action which may persist at least twenty-four hours after the last use of the drug. Hydrogen peroxide and lysol (four per cent.) were tested and found wanting.

In the present state of our bacteriological knowledge as to the causes of inflammation and suppuration, we are bound to use every means in our power to avoid sowing any unnecessary germs in our wounds. Soap and water are, Dr. Kelly believes, the best disinfectants, if we use but one, for they remove all germs which will come away easily. The bichloride of mercury, although dangerous on wounds on account of its property of coagulating and causing necrosis of albuminous tissues, has the valuable property of inhibiting those germs with which it comes into contact. Permanganate of potassium and oxalic acid are harmless to the hands and are germicidal. Soap and water plus the permanganate of potassium and oxalic acid are the only true germicides, and therefore the best disinfectants we possess to-day.—*American Journal of Obstetrics.*

Objections to Placing Hot Air Registers in Floors.—We have noticed on several occasions a most disgusting, if not dangerous, practice arising from placing hot air registers in floors. Reference is made to using the register for the purpose of a cuspidor. If attention is paid to this, one will be surprised to note the number of persons guilty of this act.

Recently in a hotel heated by natural gas, and having a large hot air register in the floor, we saw not less than half a dozen persons discharge their saliva into it. One of these was the proprietor of the hotel, an old man suffering from chronic bronchitis with a copious muco-purulent expectoration. One can scarcely imagine anything more horrible. And if we consider that consumptives may sometimes cast their expectoration into the register, the danger of the practice becomes apparent; for a more efficient method of scattering the germs of tuberculosis through the air of an apartment could not be devised.

The floor is seldom or never the place for a hot air register. With the greatest possible care a considerable amount of dirt will collect in it, polluting the air more or less, that enters the room. In the absence of cuspidors, it always offers a tempting place for the chewers of tobacco to dispose of their spittle without betraying their filthy habit. Persons coming in from out of doors, with wet, dirty feet, will nearly always stand over the register to dry their shoes, affording another source of air pollution. Other objections present themselves, but those given should suffice to condemn placing hot air registers in floors, and especially in public places.—*Monthly Sanitary Record* (Ohio).

Camphorated Salol.—Dr. Pégon has recently reported in the *Revue de Thérapeutique* some very favorable experiences with camphorated salol in the treatment of suppurative disease of the middle ear. The formula for the preparation, devised by M. Desesquelles, is as follows: Equal parts of salol and camphor are mixed and heated until fusion is complete, without water, alcohol, or any other solvent. The mixture is then filtered and preserved in a yellow glass bottle hermetically sealed. Thus prepared, camphorated salol is a thick, colorless, unctuous liquid, soluble in ether, chloroform, or oil, but insoluble in water. Light and air decompose it rapidly. Its application is neither painful nor irritating, and it seems to possess the property of rapidly curing a distressing and very intractable disease. It is applied upon a small pledget or tampon of cotton-wool; to this may be attached a fine thread by which the patient can remove it after twenty-four hours. The ear should previously be washed out with a weak boric-acid solution, and the washing should be repeated once or twice daily when the tampon is not in position. The applications are made once in two or three days, and, if the suppuration is not profuse, the tampons may be left *in situ* from one application to another. The time required for a cure varies from four to twenty days. Dr. Pégon has found the method to succeed where the more popular ones have failed, and says that even where it has not made a perfect cure it has always diminished the fœtor and amount of the purulent discharge.—*N. Y. Med. Journal.*

Earth Worms and Tubercle Bacilli.—In a communication presented to the Paris Academy of Sciences on January 25, Lortet and Despeignes (*Sem. Méd.*, January 27, 1892), after recalling the experiments by which Pasteur showed that earth worms often bring to the surface the spores of the anthrax bacterium from the earth in which animals that have died of that disease have been buried, said they had made experiments to ascertain whether these worms played a similar part in regard to the tubercle bacillus. They have satisfied themselves that earth worms may preserve within their bodies for several months tubercle bacilli which retain their vitality and virulence unimpaired. Lortet and Despeignes therefore believe that under certain circumstances the worms may be the means of disseminating the microörganisms of tuberculosis. The authors claim that this is the first time the possibility of easy tuberculisation of an invertebrate animal has been experimentally demonstrated.—*British Medical Journal.*

Changes in the Cortex Cerebri in Tuberculous Meningitis.—Goodall (*Brain*, Autumn number, 1891) has studied these changes in fresh specimens. He finds in the cortex just under the meninges very small round cells and also numerous flask-shaped cells which give off many fine processes, forming a meshwork with neighboring cells. These cells, as some of their processes reach the meninges, explain the adherence of the pia mater to the brain, to which also the vessels which dip in are closely bound. These cell processes cannot be traced deeper than the third layer of cortical cells. The minute vessels are dilated. In many specimens the nerve cells of the second and third layers are stunted and atrophied, often only the nucleus being left. As these degenerated nerve cells are always in close contact with the spindle cells, which are probably to be looked upon as scavenger cells, it appears that the degenerate nerve cells are taken up by them.—*British Medical Journal.*

A Cheap Disinfectant.—The nitrate of lead is the cheapest disinfectant known that fulfills its intent. It does not, however, prevent putrefaction. The chloride of lead is much more effective in all directions. It is made by dissolving a small teaspoonful of nitrate of lead in a pint of boiling water. When both are thoroughly dissolved, pour the two mixtures together, and when the sediment has settled you have two gallons of clear fluid, which is the saturated solution of the chloride of lead. A pound of nitrate will make several barrels of the liquid. The nitrate of lead costs from eighteen to twenty-five cents a pound at retail.—*Medical Bulletin.*

Turpentine in Pneumonia.—For the past four years I have relied almost entirely in the treatment of pneumonia on the oil of turpentine regardless of the stages of the disease, the pulse or temperature, giving it in adults in doses from 30 to 60 minims every two or three hours, either in capsules or in emulsion, the former preferred. This treatment, aided by constant *dry heat* to the lungs, front and back, with hot milk diet or beef essence, has really seemed to me to have robbed the disease of all its horrors. When first told of this treatment by Dr. Juke Johnson, of Canada, to whom I will always feel indebted, I naturally feared strangury, but in but one single case out of a great many have I seen a single symptom.—J. M. K., in *Hot Springs Medical Journal.*

An Invaluable Milk Supply.—From time to time attention has been drawn to the advantages of goat's milk as a diet for young children, and in the treatment of persons suffering from wasting diseases. Though its use is better appreciated of late, goat's milk does not yet take the position it deserves in the estimation of the profession or the public. There is a fact, probably, with reference to goat's milk, which if generally known certainly would enhance its value and largely extend its use: goat's milk is free from the element of danger in cow's milk—it is not liable to tuberculous infection. For this statement we have the support of no less an authority than Professor Nocard. In an article on the utility of the goat, by M. Pion, in the *Revue des Sciences Naturelles Appliqués*, M. Nocard is quoted as saying that "out of over 130,000 goats and kids that are brought to Paris for slaughter at the shambles of La Villette every spring, the meat inspectors of that city have failed to discover a single case of phthisis." Considering the important part milk takes in the diet of children and invalids, and that in this country it is ordinarily ingested raw, it is surely a great gain to the public to have a milk free from risk. Hitherto the ass has been regarded as the only reliable source from which milk free from any suspicion of tuberculous taint could be obtained; but whereas a milch ass is procurable with difficulty, and the supply it gives exceedingly scanty, a milch goat is more readily obtained, easier to milk, and has a greater and more prolonged supply.—*Brit. Med. Journal.*

How to Drink Milk.—Why milk is "distressing" to so many people, as they commonly complain, lies in the method of drinking it. Milk should never be taken too quickly, or too much at one swallow. If a glass of it is swallowed hastily it enters into the stomach and then forms one solid, curdled mass, difficult of digestion. If, on the other hand, the same quantity is sipped, and three minutes at least are occupied in drinking it, then on reaching the stomach it is divided, and proper digestion is obtained, as well as a most nutritious effect.—*Health Journal.*

Dr. Wm. I. Hamlin says that children under two years often suffer from fissures of the anus, and all cases of painful defecation should be carefully searched for fissure; which, when found, should be stretched and then touched with a sharp pencil of lunar caustic. One or two applications will generally cure the fissure. The cause of constipation and hard stools should be eliminated by changing the diet of the child.—*Ex.*

A Case of Poisoning by Pilocarpine.—A Belgian officer with an affection of the eyes was treated by the injection of two centigrams of this drug. Immediately his neck and then the whole of the body became bathed in sweat, in two or three minutes he was salivated, and suffered from cardiac oppression and difficulty of breathing, he fancied his chest was full of fluid, and afterwards he expectorated some frothy mucus. The cardiac oppression lasted about ten minutes, but for two hours the patient continued to have a feeling of constriction at the pit of the stomach. During this time he suffered from lacrymation, running from the nose, gastralgia, and nausea; he vomited three times, and passed his urine involuntarily. The intestinal peristalsis became violent and he had tenesmus. His eyes were fixed, and he could not recognize anyone twenty centimetres distant. The pulse was quick and small, the sufferer being in a condition bordering on collapse. By means of internal and external stimulants the symptoms disappeared.—*London Lancet.*

Compression of the Carotids as a Therapeutic Measure.—In a recent number of the *Gyógyászot* Dr. Leopold Roheim, of Budapest, publishes a case of eclampsia which he had, after the failure of a large number of remedies, successfully treated by compressing the carotids with his fingers. The publication of this case recalls the fact that the whole subject of carotid compression in its relation to the treatment of nervous diseases was thoroughly worked up by Dr. J. Leonard Corning over ten years ago. Not content with following the ancient practice of pressing upon the carotids with the fingers, Dr. Corning devised a number of ingenious instruments by means of which he was able to compress those arteries and faradize the subjacent sympathetic and pneumogastric nerves at the same time. He has embodied the results of these researches in a number of papers, and notably in a little book, *Carotid Compression*, published in 1882. Dr. Corning's contributions are especially valuable, as the conclusions arrived at are based upon a large array of cases of nervous disease in which the method was given a thorough trial. Cases of headache, eclampsia, convulsions of children, epileptic convulsions, and obstinate insomnia as it occurs in the insane were treated successfully in this way.—*New York Medical Journal.*

Effect of Alkalies on Metabolic Change.—As the effect of alkaline drugs upon the nature of the metabolic changes which albumen undergoes in the system has not been satisfactorily worked out, Dr. Yavein has made a series of elaborate observations on the subject, employing citrate and carbonate of soda for the purpose. The daily quantities of the drugs administered were 300 grains or more. The results showed as a rule that there was but little effect either on the assimilation or on the metabolic change of albumen. There was, however, a considerable increase in the neutral phosphates as compared with the acid phosphates of the urine. As a rule, the loss from the skin and lungs was diminished, and after the alkali had been discontinued the quantity of urine increased. The body weight increased while the alkali was being taken, and decreased afterwards, the increase being probably due to the diminished loss of moisture, and the decrease to the augmented secretion.—*London Lancet.*

Jefferson Medical College has secured the ground on south Broad street, between Catharine and Christian, for her new location. This is nearly a mile below Market street. The Ridgway Library is nearly opposite, and Howard, St. Agnes and the Polyclinic Hospitals in the vicinity.

The New General Hospital, Hamburg.—This model hospital is situated at Eppendorf, four and a half miles from the town, from which it is reached by tram-lines (street railway) running into the hospital grounds. It occupies forty-five acres of undulating ground of sandy soil, and comprises eighty-three separate buildings, for the most part one story high. The wards are constructed on the pavilion principle. The floors are marble, imbedded in cement. The total cost was $2,170,000, or $1,170 per bed. The cost of maintaining it in 1889 was $265,000. There are twenty-six medical advisors, ninety female nurses, and one hundred and four male attendants.—G.F.S., *Weekly Medical Review.*

Hyoscyamine in Chorea.—Prof. Da Costa continues to derive good results by the administration of hyoscyamine in cases of *chorea* which have resisted other treatment. In a recent case, a child aged 5 years, it was given in 1-300 grain doses, ter die, to be increased.

Influence of Cold on the Production of Pneumonia.—Lipari, in a paper on the above subject, says that, along with the pneumococcus, cold is of great influence in causing the pneumonia. Animals which have remained well after an intra-tracheal injection of pneumonic sputum become affected with pneumonia very quickly if exposed, either before or after the injection, to cold. The author thinks that the cold disables the ciliated epithelium of the bronchi, and causes a swelling of the mucous membrane, by which means the entrance of the infectious material into the alveoli is facilitated.—*Boston Med. and Surg. Journal.*

NECROLOGY.

Samuel Curtis Robinson, M.D.

Memorial note, adopted by the Kings County Medical Association at its meeting in February, 1892, respecting the death of their late fellow member, Samuel Curtis Robinson, M.D.:

This Association has learned with profound regret, of the loss by death, of one of its early and most attentive members, in the person of Dr. S. C. Robinson, and has ordered that a minute, expressive of their esteem and regret, shall be formed for permanent record.

In the death of our late Fellow, we have lost one of the earliest advocates of the purposes of this organization. While not an active practitioner of medicine, and not prominent in public discussions of medical questions, he was thoroughly interested in matters bearing upon life insurance, health protection and the progress of therapeutics, and was an eminently clear and logical judge in discussion of these questions. Dr. Robinson was a native of Guilford, Connecticut, born there in September, 1830. He was prepared by his father for Yale College, from which institution he was graduated in his twenty-second year. In 1855 he was granted his M.D. degree at the Medical Department at New Haven. After taking an additional course at the College of Physicians and Surgeons, New York, he traveled in the west and engaged in medical practice. He returned to New York and for a few years held the position of surgeon on one of the Trans-Atlantic steamship lines. During the war he served on the governmental transports, McClellan and some others. In 1865 he again resided in New York, and for several years occupied the position of medical examiner for the North America Life Insurance Co., and other companies. In 1867 he married the only daughter of the late Dr. James H. Henry, of Brooklyn, in which city he has ever since resided. His wife, one son, and one daughter survive him. He died after a short illness, December 20, 1891.

Resolved, That this Association keenly regrets the untimely death of their associate member, and will feel the absence of his sincere counsel and coöperation, and must feelingly sympathize with the members of his family in their sorrowful bereavement.

Signed. R. M. Wyckoff,
W. P. Beach.
Brooklyn, N. Y., February 1, 1892. Committee.

Dr. James Sweeney, of Brooklyn, New York, died February 18, aged fifty-four years, from an attack of epidemic influenza, eventuating in cardiac failure. He was a native of Wales, but came to this country when a child. He was an alumnus of the Albany Medical College, in 1859, and a resident of Brooklyn since 1865. He was prominent in public affairs, especially in connection with sanitary matters and the Board of Education.

Dr. James Christie, of Glasgow, editor of the *Sanitary Journal*, died in January, aged fifty-five years. As an epidemiologist and sanitarian he acquired a high reputation. He at one time lived in East Africa, and was the trusted physician of the Sultan of Zanzibar. He was also connected with the Zanzibar Dispensary and Hospital, conducted by the Universities of England Mission. His little Journal, edited by him continuously from 1878, has been an evangel of sanitary reform in the Scottish cities whose *pauvres faubourgs* suffer so much from overcrowding and uncleanliness, the inheritance of long generations of conservatism and landlordism. The *Sanitary Journal* was the means of doing much good, by championing, early and late, the rights of the poor rent-payer in the tenement houses, who was also the eventual and chief tax-payer. In Glasgow there is a population of 75,000 of this class, who are described as not only "paying interest on their poverty, but on character also." They comprise the criminal elements and the whole social *debris* of that city; some are making a brave fight against poverty, while more are bankrupts alike in fortune and in character. "They are the nomads of our population," as Dr. James B. Russell has said in Dr. Christie's *Journal*; "if we could see them in their constant movements from place to place, the sight would resemble nothing so much as that which meets our eye when we lift a stone from an ant's nest." It was for these human ants that Dr. Christie labored so many years, and for whom he accomplished so much.

BOOK REVIEWS.

Human Monstrosities. Part II. By Barton Cook Hirst and George A. Piersol.

This, the second part of what bids fair to be the best teratological treatise extant, is fully up to the previous volume in point of excellence. The plates are superbly executed and the illustrations have been made with the specimens in the most advantageous positions for purposes of study.

MISCELLANY.

Association of American Physicians—Preliminary Announcement.—The next annual meeting of the Association of American Physicians will be held on Tuesday, Wednesday, and the morning of Thursday, May 24, 25 and 26, 1892, in the Medical Museum and Library, Washington, D. C.

The subject selected for discussion is Dysentery. Dr. William T. Councilman, as Referee, will consider the Etiology and Pathology, and Dr. A. Brayton Hall, as Co-Referee, the Symptomatology, Complications and Treatment.

The following members will present papers:

Henry M. Lyman—The President's Address.
Charles Carey—The Production of Tubular Breathing in Consolidation and other Conditions of the Lungs.
Samuel C. Chew—(Title to be announced later).
William C. Dabney—A Contribution to the Study of Hepatic Abscess.
I. N. Danforth—Tube Casts and their Diagnostic Value.
George M. Garland—The Treatment of Follicular Tonsillitis.
Heneage Gibbes—The Morbid Anatomy of Leprosy.
Hobart A. Hare—A Collective Investigation in regard to the Value of Quinine in Malarial Hæmaturia or Malarial Hæmoglobinuria.
A. Jacobi—(Title to be announced later).
W. W. Johnston—Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation.
Thomas S. Latimer—Alcoholism.
Morris J. Lewis—A Study of the Seasonal Relations of Chorea and Rheumatism for a period of fifteen years.
Morris Longstreth—(Title to be announced later).
Francis T. Miles—A Case presenting the Symptoms of Landry's Paralysis, with Recovery.
William Pepper—Report of a Case of Glanders, with results of Bacteriological Study.
T. Mitchell Prudden—(Title to be announced later).
George M. Sternberg—Practical Results of Bacteriological Researches.
Charles G. Stockton—Misconceptions and Misnomers Revealed by Modern Gastric Research.
William H. Thompson—The Significance of Intermission in Functional Nervous Diseases.
Victor C. Vaughan—Certain Toxicogenic Germs found in Drinking-Water.
B. F. Westbrook—Studies in Hypnotism.
James C. Wilson—Pulsating Pleural Effusions.
George Wilkins—The Cold Water Treatment of Typhoid Fever.

Members wishing to present papers are requested to send their names, with the title of the papers, to the Secretary. Papers can be read by title at the meeting, and appear in the volume of Transactions.

The Constitution of the Association (Article VI, sections 4 and 5) provides that: Authors of papers, and referees and co-referees, who open a discussion, shall not occupy more than thirty minutes each; and in the discussion following, the remarks of each speaker shall be limited to ten minutes.

The referees, co-referees, and authors of papers, shall send abstracts of their papers to the Council, for distribution to members previous to the meeting.

This provision, however, does not preclude a fuller or more detailed presentation of the subject in the articles prepared for the Transactions, but the limits of time prescribed for the reading of the papers will be enforced.

Henry Hun, Secretary,
33 Elk St., Albany, N. Y.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending February 27, 1892.

P. A. Surgeon V. C. B. Means, detached from Naval Hospital, New York, and to Navy Yard, New York.
Asst. Surgeon George A. Lung, detached from Navy Yard, New York, and to Naval Hospital, New York.
P. A. Surgeon E. H. Marsteller, detached from Marine Rendezvous, Baltimore, and wait orders.
P. A. Surgeon F. J. B. Cordeiro, detached from Marine Rendezvous, Boston, and to the U. S. S. "Adams."

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ORIGINAL ARTICLES.

THE TREATMENT OF CORNEAL ULCERS.

Read before the Milwaukee Medical Society, February 9, 1892.

BY J. A. BACH, M.D.,
OF MILWAUKEE, WIS.

One of the most formidable pathological processes of the eye the physician has to deal with is what is known as suppurative keratitis, or ulceration of the cornea. It is safe to state that more eyes are partially or totally destroyed through corneal ulcerations than through any other ocular disease, including injuries and operations.

It is with great anxiety that, when any of the purulent ophthalmies present themselves to the physician for treatment, he carefully opens the eyelids to inspect whether or not the cornea shows any evidence of ulceration. A sense of relief is felt to find the negative true. But not only in the suppurative ophthalmies is this so, ulcerations under many other circumstances may become equally unpleasant and formidable. The many staphylomatous and white eyes, and often no eyes at all, one sees in the various institutions for the blind, as well as on the streets, are a living evidence to this fact. It is not my object to speak of the pathology of ulcerative processes of the cornea, but to form a basis for a successful treatment. I will mention a few facts relative to corneal infection and ulceration.

Ulcerations of the cornea depend, with but few exceptions, for their immediate or remote cause upon some microörganism or ptomaine which, through some avenue or other, gains admission. It is a well-known fact that under apparently unfavorable circumstances the cornea has great power of resistance to infections; but once infected, it often becomes a very difficult matter to eliminate the infection. This depends upon the peculiar structure of the cornea. As you all well know, the cornea is made up of five distinct layers, an outer or epithelial layer being continuous with the conjunctiva; next comes a thin but very dense membrane, known as Bowman's membrane; then comes the corneal tissue proper, which forms about two-thirds the thickness of the cornea; beyond that there is the membrane of Descemet, another very dense and resisting membrane, and next to the aqueous is an endothelial layer. The outer or epithelial layer has but slight resisting power, but it is due to Bowman's membrane that deep infection becomes difficult. Should, however, the infection penetrate beyond Bowman's membrane it is easy to see how the less dense corneal tissue would become quickly infected, and being protected by the overlying dense membrane of Bowman surrounding the source of infection it is equally easy to understand the difficulty encountered in the effective application of remedies.

Although the cornea absorbs liquids with avidity, yet the more powerful antiseptic solutions, such as the sublimate, are not well absorbed, and consequently their value as active and reliable remedies in ulcerations of the cornea has, in many cases, shown itself to be insufficient. Within recent time the analine dyes, being readily absorbed, have been advocated as of great utility, and in the hands of those that have used them have given good results. There is the one great objection to their use, of leaving opacities. A most rational means of cure, but one which is being much neglected, to the great detriment of many eyes, is the use of the galvano-cautery. As a preliminary step of all the severer and deeper ulcerations of the cornea, nothing can commend itself as the red-hot point. From a surgical standpoint, this is the only rational means to favor a quick and safe conclusion of the disease process. With it we are enabled to, without the least danger, lay open our field of infection, remove the over-lying obstructions, and give free access to our remedies to act, and thus insure a speedy termination of the ulceration. In conjunction with the above it is important to stimulate local nutrition and tissue change, which is best done by means of hot fomentations. The instillation of an atropine solution is also much to be desired, as it relieves the irritation of the ciliary nerves and spasm of the iris. The antiseptic and local stimulant of nutrition I have found to give the greatest satisfaction is a 10 per cent. aristol solution in sweet oil. This seems to be readily absorbed, is a comfort to the patient, and in my experience with it I have never found it to fail in doing good. In the lighter and more superficial ulcerations I have often depended upon it, instilling the same into the eye twice or thrice daily, after atropinization and drying of the eye. I have also found it to have a most happy effect upon the purulent process in cases of ophthalmia neonatorum, generally using it immediately after the local application of a 2 per cent. nitrate of silver solution.

Before reporting a few select cases I wish to recapitulate a mode of treatment which may be of value to you. Careful cleanliness in all cases is prerequisite. The use of any mild antiseptic solution such as boracic acid sol. or peroxide of hydrogen will answer the purpose. Atropine is used in nearly all cases, not so much for its curative effect as for the fact that it relieves spasm of the iris and ciliary irritation. It also assists in avoiding a possible prolapse of the iris in cases of perforating ulcer.

In peripheral perforations eserine is safer, though attended with pain at times.

In a case of simple ulceration of the cornea, the use of a 1 per cent. atropine solution combined with the instillation of a 10 per cent. solution of aristol in sweet oil, hot fomentations and bandage, gives, generally speaking, without any further means being thoroughly interested in matters bearing upon life insurance, health protection and the progress of therapeutics, and was an eminently clear and logical judge in discussion of these questions. Dr. Robinson was a native of Guilford, Connecticut, born there in September, 1830. He was prepared by his father for Yale College, from which institution he was graduated in his twenty-second year. In 1855 he was granted his M.D. degree at the Medical Department at New Haven. After taking an additional course at the College of Physicians and Surgeons, New York, he traveled in the west and engaged in medical practice. He returned to New York and for a few years held the position of surgeon on one of the Trans-Atlantic steamship lines. During the war he served on the governmental transports, McClellan and some others. In 1865 he again resided in New York, and for several years occupied the position of medical examiner for the North America Life Insurance Co., and other companies. In 1867 he married the only daughter of the late Dr. James H. Henry, of Brooklyn, in which city he has ever since resided. His wife, one son, and one daughter survive him. He died after a short illness, December 20, 1891.

Resolved, That this Association keenly regrets the untimely death of their associate member, and will feel the absence of his sincere counsel and coöperation, and must feelingly sympathize with the members of his family in their sorrowful bereavement.

Signed.

R. M. Wyckoff,
W. P. Beach,
Committee.

Brooklyn, N. Y., February 1, 1892.

Dr. James Sweeney, of Brooklyn, New York, died February 18, aged fifty-four years, from an attack of epidemic influenza, eventuating in cardiac failure. He was a native of Wales, but came to this country when a child. He was an alumnus of the Albany Medical College, in 1859, and a resident of Brooklyn since 1865. He was prominent in public affairs, especially in connection with sanitary matters and the Board of Education.

Dr. James Christie, of Glasgow, editor of the *Sanitary Journal*, died in January, aged fifty-five years. As an epidemiologist and sanitarian he acquired a high reputation. He at one time lived in East Africa, and was the trusted physician of the Sultan of Zanzibar. He was also connected with the Zanzibar Dispensary and Hospital, conducted by the Universities of England Mission. His little Journal, edited by him continuously from 1878, has been an evangel of sanitary reform in the Scottish cities whose *pauvres faubourgs* suffer so much from overcrowding and uncleanliness, the inheritance of long generations of conservatism and landlordism. The *Sanitary Journal* was the means of doing much good, by championing, early and late, the rights of the poor rent-payer in the tenement houses, who was also the eventual and chief tax-payer. In Glasgow there is a population of 75,000 of this class, who are described as not only "paying interest on their poverty, but on character also." They comprise the criminal elements and the whole social *debris* of that city; some are making a brave fight against poverty, while more are bankrupts alike in fortune and in character. "They are the nomads of our population," as Dr. James B. Russell has said in Dr. Christie's *Journal*; "if we could see them in their constant movements from place to place, the sight would resemble nothing so much as that which meets our eye when we lift a stone from an ant's nest." It was for these human ants that Dr. Christie labored so many years, and for whom he accomplished so much.

BOOK REVIEWS.

Human Monstrosities. Part II. By Barton Cook Hirst and George A. Piersol.

This, the second part of what bids fair to be the best teratological treatise extant, is fully up to the previous volume in point of excellence. The plates are superbly executed and the illustrations have been made with the specimens in the most advantageous positions for purposes of study.

MISCELLANY.

Association of American Physicians—Preliminary Announcement.—The next annual meeting of the Association of American Physicians will be held on Tuesday, Wednesday, and the morning of Thursday, May 24, 25 and 26, 1892, in the Medical Museum and Library, Washington, D. C.

The subject selected for discussion is Dysentery. Dr. William T. Councilman, as Referee, will consider the Etiology and Pathology, and Dr. A. Brayton Hall, as Co-Referee, the Symptomatology, Complications and Treatment.

The following members will present papers:

Henry M. Lyman—The President's Address.

Charles Carey—The Production of Tubular Breathing in Consolidation and other Conditions of the Lungs.

Samuel C. Chew—(Title to be announced later).

William C. Dabney—A Contribution to the Study of Hepatic Abscess.

I. N. Danforth—Tube Casts and their Diagnostic Value.

George M. Garland—The Treatment of Follicular Tonsillitis.

Heneage Gibbes—The Morbid Anatomy of Leprosy.

Hobart A. Hare—A Collective Investigation in regard to the Value of Quinine in Malarial Hæmaturia or Malarial Hæmoglobinuria.

A. Jacobi—(Title to be announced later).

W. W. Johnston—Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation.

Thomas S. Latimer—Alcoholism.

Morris J. Lewis—A Study of the Seasonal Relations of Chorea and Rheumatism for a period of fifteen years.

Morris Longstreth—(Title to be announced later).

Francis T. Miles—A Case presenting the Symptoms of Landry's Paralysis, with Recovery.

William Pepper—Report of a Case of Glanders, with results of Bacteriological Study.

T. Mitchell Prudden—(Title to be announced later).

George M. Sternberg—Practical Results of Bacteriological Researches.

Charles G. Stockton—Misconceptions and Misnomers Revealed by Modern Gastric Research.

William H. Thompson—The Significance of Intermission in Functional Nervous Diseases.

Victor C. Vaughan—Certain Toxicogenic Germs found in Drinking-Water.

B. F. Westbrook—Studies in Hypnotism.

James C. Wilson—Pulsating Pleural Effusions.

George Wilkins—The Cold Water Treatment of Typhoid Fever.

Members wishing to present papers are requested to send their names, with the title of the papers, to the Secretary. Papers can be read by title at the meeting, and appear in the volume of Transactions.

The Constitution of the Association (Article VI, sections 4 and 5) provides that: Authors of papers, and referees and co-referees, who open a discussion, shall not occupy more than thirty minutes each; and in the discussion following, the remarks of each speaker shall be limited to ten minutes.

The referees, co-referees, and authors of papers, shall send abstracts of their papers to the Council, for distribution to members previous to the meeting.

This provision, however, does not preclude a fuller or more detailed presentation of the subject in the articles prepared for the Transactions, but the limits of time prescribed for the reading of the papers will be enforced.

Henry Hun, Secretary,
33 Elk St., Albany, N. Y.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending February 27, 1892.

P. A. Surgeon V. C. B. Means, detached from Naval Hospital, New York, and to Navy Yard, New York.

Asst. Surgeon George A. Lung, detached from Navy Yard, New York, and to Naval Hospital, New York.

P. A. Surgeon E. H. Marsteller, detached from Marine Rendezvous, Baltimore, and wait orders.

P. A. Surgeon F. J. B. Cordeiro, detached from Marine Rendezvous, Boston, and to the U. S. S. "Adams."

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ORIGINAL ARTICLES.

THE TREATMENT OF CORNEAL ULCERS.

Read before the Milwaukee Medical Society, February 9, 1892.

BY J. A. BACH, M.D.,
OF MILWAUKEE, WIS.

One of the most formidable pathological processes of the eye the physician has to deal with is what is known as suppurative keratitis, or ulceration of the cornea. It is safe to state that more eyes are partially or totally destroyed through corneal ulcerations than through any other ocular disease, including injuries and operations.

It is with great anxiety that, when any of the purulent ophthalmies present themselves to the physician for treatment, he carefully opens the eyelids to inspect whether or not the cornea shows any evidence of ulceration. A sense of relief is felt to find the negative true. But not only in the suppurative ophthalmies is this so, ulcerations under many other circumstances may become equally unpleasant and formidable. The many staphylomatous and white eyes, and often no eyes at all, one sees in the various institutions for the blind, as well as on the streets, are a living evidence to this fact. It is not my object to speak of the pathology of ulcerative processes of the cornea, but to form a basis for a successful treatment. I will mention a few facts relative to corneal infection and ulceration.

Ulcerations of the cornea depend, with but few exceptions, for their immediate or remote cause upon some microörganism or ptomaine which, through some avenue or other, gains admission. It is a well-known fact that under apparently unfavorable circumstances the cornea has great power of resistance to infections; but once infected, it often becomes a very difficult matter to eliminate the infection. This depends upon the peculiar structure of the cornea. As you all well know, the cornea is made up of five distinct layers, an outer or epithelial layer being continuous with the conjunctiva; next comes a thin but very dense membrane, known as Bowman's membrane; then comes the corneal tissue proper, which forms about two-thirds the thickness of the cornea; beyond that there is the membrane of Descemet, another very dense and resisting membrane, and next to the aqueous is an endothelial layer. The outer or epithelial layer has but slight resisting power, but it is due to Bowman's membrane that deep infection becomes difficult. Should, however, the infection penetrate beyond Bowman's membrane it is easy to see how the less dense corneal tissue would become quickly infected, and being protected by the overlying dense membrane of Bowman surrounding the source of infection it is equally easy to understand the difficulty encountered in the effective application of remedies.

Although the cornea absorbs liquids with avidity, yet the more powerful antiseptic solutions, such as the sublimate, are not well absorbed, and consequently their value as active and reliable remedies in ulcerations of the cornea has, in many cases, shown itself to be insufficient. Within recent time the analine dyes, being readily absorbed, have been advocated as of great utility, and in the hands of those that have used them have given good results. There is the one great objection to their use, of leaving opacities. A most rational means of cure, but one which is being much neglected, to the great detriment of many eyes, is the use of the galvano-cautery. As a preliminary step of all the severer and deeper ulcerations of the cornea, nothing can commend itself as the red-hot point. From a surgical standpoint, this is the only rational means to favor a quick and safe conclusion of the disease process. With it we are enabled to, without the least danger, lay open our field of infection, remove the over-lying obstructions, and give free access to our remedies to act, and thus insure a speedy termination of the ulceration. In conjunction with the above it is important to stimulate local nutrition and tissue change, which is best done by means of hot fomentations. The instillation of an atropine solution is also much to be desired, as it relieves the irritation of the ciliary nerves and spasm of the iris. The antiseptic and local stimulant of nutrition I have found to give the greatest satisfaction is a 10 per cent. aristol solution in sweet oil. This seems to be readily absorbed, is a comfort to the patient, and in my experience with it I have never found it to fail in doing good. In the lighter and more superficial ulcerations I have often depended upon it, instilling the same into the eye twice or thrice daily, after atropinization and drying of the eye. I have also found it to have a most happy effect upon the purulent process in cases of ophthalmia neonatorum, generally using it immediately after the local application of a 2 per cent. nitrate of silver solution.

Before reporting a few select cases I wish to recapitulate a mode of treatment which may be of value to you. Careful cleanliness in all cases is prerequisite. The use of any mild antiseptic solution such as boracic acid sol. or peroxide of hydrogen will answer the purpose. Atropine is used in nearly all cases, not so much for its curative effect as for the fact that it relieves spasm of the iris and ciliary irritation. It also assists in avoiding a possible prolapse of the iris in cases of perforating ulcer.

In peripheral perforations eserine is safer, though attended with pain at times.

In a case of simple ulceration of the cornea, the use of a 1 per cent. atropine solution combined with the instillation of a 10 per cent. solution of aristol in sweet oil, hot fomentations and bandage, gives, generally speaking, without any further means being used, a speedy and satisfactory cure. Should the ulceration persist and spread in depth and width, be painful even after the above, it becomes advisable to resort to the galvano-caustic at once. A great mistake is often made by putting off its use from day to day until the ulceration has become quite extensive, necessitating large cauterizations. If used early and *before the ulcer has reached the pupillary field*, the cautery puts an effective check to its spread without leaving objectionable scars. If the ulcer is quite deep and a perforation seems to be inevitable, it is best to anticipate such in the performance of a paracentesis. We can thus better avoid a prolapse of the iris into the wound of the perforation. Paracentesis will not be found necessary often where the galvano-caustic has been used thoroughly at the proper time. Although being an operation that is quite innocent if properly done, it may be resorted to with benefit where the ulceration is deep and the pain great. By relieving the internal pressure it favors a speedy healing. After any of the surgical means used in any given case the use of atropine and aristol is to be continued in conjunction with the hot fomentations and rest in bed as the case may require, depending upon its severity.

Case 1.—Mr. Christian Differt came to consult me about a large ulcus serpigenosus covering nearly one-third of the cornea. Mr. Differt had been under treatment for over two weeks, but in spite of all treatment the ulcus grew larger and the pain became more unbearable. The history of the ulcer was that it started as a small marginal infection, which by degrees crept back and forth over the cornea until it had gradually infected a larger part of the cornea, and the remedies that were applied seemed to have had no effect whatsoever.

This is one of the most severe and persisting forms of ulceration and demanded a very decided interference. The thorough application of the galvano-caustic with the use of the other means mentioned put an immediate check not only to the further extension of the ulcer but to all pain and 'discomfort, and the patient could be discharged cured in a very short time.

Case 2.—Mrs. Martha Guember, after having been treated for upwards of three weeks for a deep annular ulcer of the left eye, covering a large portion of the cornea, presented herself for treatment at my office, and after a single application of the galvano-caustic with 10 per cent. aristol and atropine made a speedy and safe recovery without the least extension of the ulcer.

Case 3.—Mr. Coon came to me with a history of gonorrhœal ophthalmia with ulceration of the cornea. It was a very severe and almost hopeless case, yet by careful treatment as above outlined made a quick and very satisfactory recovery.

I do not wish to take up your time any further in reporting these separate cases but would state that in at least twenty cases during last year I pursued this treatment with such uniform satisfaction in even the most severe and hopeless cases, that I can highly recommend this course of treatment. The amount of cicatricial tissue produced by the galvano-caustic is not any more than the ulcer itself would leave, and if operated before the pupillary field is reached no harm can result from it.

DISCUSSION.

Dr. Hayes: Would you apply the cautery where the pupillary field of the cornea is affected?

Dr. Farnham: With reference to the peroxide of hydrogen treatment, can that be pressed and followed by the aristol, so that a large per cent. of cases are cured with it? Cannot you get the peroxide to penetrate and thus cure the corneal ulcer? I refer, of course, to the persistent use of the remedy. And cannot the wound be cleansed with it?

Dr. Würdemann: This subject is one on which we are all apt to temporize. I have seen ulcerations going weeks and weeks, and finally having to come to the galvano-cautery. In most all cases one application will heal a severe ulcer such as comes after gonorrhœal ophthalmia. The use of atropine in corneal ulcerations gives relief to pain, but probably has no effect on iris prolapse, because if the anterior chamber is cut open, or if there is a leaking of the aqueous humor, the atropine will have no effect upon the iris; but the pupil will remain contracted or in a state of partial contraction. Some place much reliance upon the use of eserine; it is claimed that it has a specific action in the healing of the cornea; I have been in the habit of using it sometimes in connection with atropine, using the latter purely on account of its analgesic effect.

Dr. Frank: Has not resorcin been used in similar ulcerations of the cornea?

Dr. Farnham: In the application of the cautery, do you cover the whole surface of the ulcer?

Dr. Würdemann: There are no bad results in the use of the peroxide of hydrogen with small corneal ulcerations; I have used it in one case where it raised the whole epithelial tissue, but the next day I found that no harm had been done; the gas had been absorbed and the tissue had gone back to place.

Dr. Bach: In reply to Dr. Hayes' question I would state that in case of the involution of the pupillary field and when the ulcer has perforated Bowman's membrane and entered the tissue, it is best to apply the cautery there, and check the spread of the disease and allow opportunity for iridectomy later on; in that way we may gain a very good vision, but otherwise we may destroy the field for iridectomy. The method is being used more and more with continued and increasing satisfaction.

With regard to Dr. Farnham's remarks about the peroxide of hydrogen treatment, I would say that while peroxide of hydrogen acts very nicely in some cases, nevertheless the activity is not great enough to destroy some of the severer forms of ulceration, and the spreading of the disease is a great source of danger; you can use the peroxide for cleansing the wound, but you cannot destroy the germ in the severer forms of the disease by the employment of it.

With regard to the employment of resorcin, the latest reports have not been as favorable as others; resorcin is not perfectly satisfactory in these diseases.

This is an ulceration which goes on under a dense, well protected membrane. The ulceration does not progress, as such, in the epithelial layer at all; the ulceration creeps under Bowman's membrane and the epithelial tissue proper, and the latter, of course, becomes destroyed.

The galvano-cautery should be applied only to the borders of the ulcer.

In reference to Dr. Würdemann's remarks, I should say that eserine seems to exercise a very favorable effect in some cases, but it is sometimes attended with considerable pain on account of the spasm it produces to the membrane.

With regard to raising the epithelial tissue by the use of peroxide of hydrogen, I would say that that happens quite generally. When the peroxide is used, it enters quite a distance under the epithelial layer; but it will disappear in a few hours.

Concerning drugs generally I would say that they are hardly sufficient and that the only rational means are surgical. For that reason I have dwelt considerably on the subject of the cautery, and since there is no objection to its use, I do not see why we should depend upon various drugs except for the purpose of cleanliness. The cautery is a simple, quick and effective means and saves a great deal of time and pain; it does not produce inflammation, and is applied painlessly by the use of cocaine, and in every possible way it is an advantage, and really it is the only rational method; which is not the case with any drug. They can only be auxiliary to the operation.

IMMIGRATION AND TYPHUS.—A resolution has been introduced in the national House of Representatives in concurrence with the Senate providing for an investigation by the Senate and House Committees on Immigration, of the law relative to immigration, and the facts attending the condition of the typhus-stricken Russians at New York.

SOME EXCEPTIONS TO "THE GOLDEN RULES" OF OBSTETRICS.

BY T. RIDGWAY BARKER, M.D.,
emonstrator of Obstetrics in the Medico-Chirurgical College, Philadelphia; Out-Door Obstetrician to the Penn Dispensary.

In presenting this paper it is not the intention of ie author to attempt to undermine the "golden iles" of the obstetric art, but rather to call atten-on to the exceptions and limitations which hedge iem in and which, unless borne in mind, are certain) result disastrously to both patient and physician. heory, 'tis well said, may be likened to the chaff hich is blown hither and thither by every passing reeze, while practice is the golden grain that springs ito life wherever it falls. Yet, let us not discard s worthless these husks, for they serve a good purose in protecting the unripe fruit stored up within hem, and besides are useful in feeding the flame of cientific research. The one rule upon which, peraps, more stress has been laid in the department of bstetrics than any other is: "In cases of labor atended with severe hæmorrhage during the latter part f the second and the whole of the third stage, romptly empty the uterus, and at the same time timulate uterine contractions." Few there are, periaps, who cannot recall the force and earnestness ith which such a practice was advocated. "Turn ut the infernal clots," still rings in many old stulent's ears, though the author of them has long since assed away. But is this rule, though a good one, o be rigidly carried out under all circumstances? Theory boldly makes answer, without hesitation, 'Yes!" while Practice, on the other hand, says, "No!" Hence, we must turn to Experience as being a higher court, and submit the whole matter to her for a final lecision.

Before, however, asking for an opinion, I would offer in evidence the history of the following case, which has, I think, a direct bearing upon the subject: Mrs. F., aged 30 years, white; American; mother of two children, both now deceased, I was called upon to attend in 1889. There was no history of miscariages, nor tendency to hæmorrhage in previous coninements. She last menstruated on September 16; luration, five days; in every respect normal. Some weeks after its disappearance there occurred slight morning sickness, but at no time did it seem likely to undermine the patient's health. The usual bladder and respiratory disturbances were present; likewise, anæmia, which tended to become aggravated as gestation advanced toward completion. Calculating by the Duncan method, her confinement might be expected about the last week in June or the first in July.

On the 28th day of May, however, I was called to attend Mrs. F. She had been, I was informed, in labor all night. Deeming a digital vaginal examination necessary, I proceeded at once to place my patient in proper position. On exploration of the utero-vaginal canal, I found the uterus settled low down in the pelvis, with the cephalic end of the fœtus presenting. The os was already somewhat dilated, and each pain caused its further increase and bulging of the membranes, indicating, beyond contradiction, that whatever had been the duration of the period of gestation the woman was in the first stage of labor. The fetal heart-sounds were audible, and the uterine contractions, though not very strong, were of ordinary length and frequency. The abdomen was not unduly distended, and there seemed no cause for anxiety as to the ultimate result. Leaving my patient to the care of a neighbor, who was to act as nurse, I did not see her again for some hours. On my return I found, on inquiry, that the pains were rather weak, and that, though the os was sufficiently dilated, the head had not engaged satisfactorily.

My patient was much exhausted, and gave evidence of a lack of nervous tone, which warned me that to delay longer the delivery of the fœtus would endanger its life as well as that of the mother. Why the prostration should have been so rapid and extreme, since it developed in a few hours, I was at a loss to understand, until subsequent investigation acquainted me with the fact that my patient had taken large and frequent draughts of whisky in my absence, in direct violation of instructions.

Deeming the case to be one suited to the immediate application of the forceps, I applied them to the sides of the fœtal head and delivered, without undue haste or difficulty, under chloroform. No laceration of cervix or vagina was discoverable, though hæmorrhage quickly followed extraction, and was of an acute character, which had its origin in the uterine cavity.

Hastily grasping the fundus of the uterus, I found the organ was not contracting properly, and that I had to treat a grave case of post-partum hæmorrhage without adequate assistance. By external manipulation over the abdomen I endeavored to secure firm uterine contractions, but though the muscular fibers responded slightly to strong irritation, yet in a few seconds relaxation followed, and the blood poured forth in a stream from the vulva.

Like a flash of lightning the golden rule—"turn out the clots, separate and remove the retained placenta"—came into my mind, and I proceeded to do so. Introducing one hand into the vagina and carrying it up into the uterine cavity, while the other grasped the body of the organ through the abdominal wall, I strove to detach the placenta which I found adherent to the internal coat. The difficulty attending separation was due to a failure of the chononic villi to undergo atrophic changes as the gestation approached full term. At last the villus attachments were broken up and the placenta withdrawn by the examining hand. During the time expended in attempting to remove the afterbirth my patient was given one drachm doses of the fluid extract of ergot every fifteen minutes, part of which was, however, vomited. No sooner had I emptied the uterus than the flow of blood, instead of lessening, greatly increased, until it fairly welled out of the birth canal, and running through the mattress formed a pool on the floor.

Vaginal injections of hot water proved ineffectual, seeming rather to increase than to control the hæmorrhage. To keep the uterine cavity free from accumulated blood and secure contractions was impossible. The blood had lost the power to coagulate, and could not respond to the means employed to bring about such a desired condition. It remained, even on the floor, in a perfectly fluid state, though exposed to atmospheric influences. A strong solution of the subsulphate of iron in hot water was thrown by a Davidson syringe into the uterine cavity, but failed to reach the bleeding point owing to the amount of blood already in the organ. The uterine walls were as limp as a wet piece of tissue paper, perfectly devoid of their normal tonicity. Ergot had not the slightest effect; in fact, it was doubtful if it was even absorbed.

Stimulants, whether introduced by hypodermic or stomachic methods, were unavailing. What was to be done? By this time my patient was almost exsanguin and in a state verging on collapse. Consciousness was lost, though her head had been lowered and her feet elevated at the very first sign of dangerous hæmorrhage. Intense thirst was present, and it was evident unless the bleeding was speedily controlled death would inevitably result.

A binder was now drawn tightly about the abdomen with the hope of preventing further relaxation of the organ, but it, like the other means, failed.

Still the flow continued in spite of drugs, external and internal manipulations, and efforts directed to compress the abdominal aorta. To stop the hæmorrhage seemed beyond the powers of science. In about fifteen minutes after the completion of the third stage of labor life was extinct. Not less than two quarts of blood had been lost; besides, the cavity of the uterus was distended with, perhaps, half as much more. Thus terminated fatally one of the saddest and most trying cases of post-partum hæmorrhage I have been called upon to treat.

In meditating upon the management of this case, I now see, which experience, not a blind adherence to theory, has demonstrated, that the result was due indirectly, if not directly, to three causes: First, excessive imbibation of whisky, taken by the patient contrary to orders, which tended still further to depress the already anæmic nerve centers at a time when life depended upon their activity; second, persistent efforts to separate an adherent placenta in a case complicated by threatened uterine inertia with the idea of removing all substances likely to retard or prevent uterine contractions; in other words, following out literally that golden rule—"turn out all clots from the uterus and remove the placenta as early as possible in cases of labor complicated by hæmorrhage"; third, the mistake made in not packing the whole uterine cavity at once with any clean fibrous material at hand, saturated with a powerful styptic, as soon as it was evident the uterus would not, or could not contract. This latter procedure, which at present has so many advocates, and has given such satisfactory results—Dührssen, of Berlin, having treated seventy-nine cases successfully—in addition to the other means employed, would, I firmly believe, have saved my patient. But I hesitated to tamponade the cavity of the organ, fearing subsequent infection, and relied upon other measures, which I pushed to the limit of safety, believing every moment they would excite the uterus to contract and close the open-mouthed uterine sinuses. Having failed, through an error of judgment, to employ the comparatively new method of tamponing the uterine cavity, I feel justified in bringing this subject to the attention of the medical profession, that the exception to this golden rule may be laid down as strongly as the rule itself. The case I have reported only too clearly proves how important is our duty in this respect. Let us take warning, lest we are over-anxious to tear off a placenta and clear the uterus of its contents; for if the organ fails to contract, we will only drain off more blood and further jeopardize the life of our patient. That one cannot rely solely upon ergot in such an emergency would appear evident from cases reported by Oui, of Bordeaux, who, in order to save his patients, was obliged to tampon the uterus. Should we be obliged to resort to packing the uterine cavity, let us not delay doing so, lest our patient expire while we stand idly by making up our mind. Direct and equitable pressure, which can thus be brought to bear upon the bleeding points, is the safest and surest method of treating grave cases of post-partum hæmorrhage. That there is an element of danger from subsequent infection, is very true; but what is the risk of septicæmia in competent hands compared to instant death? Under such circumstances the demand is for immediate action, or our patient will be a corpse. In conclusion, then, it would appear that the exceptions to these golden rules are no whit less important than the rules themselves. Practice must govern theory; not theory, practice. Therefore let us express, without fear of contradiction, these exceptions: First, do not tear off an adherent placenta from the uterine wall, in cases of labor complicated by hæmorrhage, unless the uterus gives promise of speedily contracting.

Second, emptying the uterus of fluid blood is useless when coagulation cannot be secured, and when uterine inertia persists.

Third, do not delay packing the whole utero-vaginal canal firmly, in post-partum hæmorrhage, if the organ will not contract and close the uterine sinuses.

A CHILD WITHOUT ARMS OR LEGS. MATERNAL IMPRESSIONS.

BY JACOB SCHNECK, M.D.,
OF MT. CARMEL, ILL.

On September 30, 1885, I attended Mrs. B. in her third accouchement: I found a breech presentation, in the sacro-pubic anterior position. The child was a female, and was born after about four hours' ordinary labor. The cry was feeble at time of birth, and gradually grew weaker until, at the end of fifty minutes, the child died; no special effort was made to assist it to live. It weighed about 7 lbs. The body, so far as external inspection could determine, was in every way normal and well developed. The four extremities were entirely absent. The ends of the clavicle and scapula could be distinctly felt; but there was no sign of a remnant of an arm. The lower extremities were represented, each, by a fleshy teat-like protuberance, about ½ inch long; these did not appear to be attached to the pelvic bones, nor could I find any small nails attached to them.

The umbilical cord was small and about 15 inches long. The membranes were thick and of a dirty yellow color, and contained a small quantity of a thick fluid. Floating in this was about one pint of a thick whitish, soft substance, which had the appearance of macerated and partially dissolved skin. The inner surface of the membranes showed no evidences of former bands or ligatures.

The mother, an American woman of good family, is an uncommonly well developed individual, being a little above the medium height; was then 23 years old; is very fond of the dance and other gay society—had spent many of the evenings during the preceding winter on roller skates. She had menstruated regularly, last, on January 4, 1885, 269 days before her confinement. Was in excellent health until May

30, when she was attacked with inflammatory rheumatism, which, after the first ten days, assumed a chronic form, and was then principally confined to the left knee-joint, which was still stiff and considerably enlarged at date of accouchement. On the evening of March 22, two and one-half months after the last menstruation, she saw the dead, and partially naked, body of a young woman who had been burned so severely that she died in a few hours. The arms and body were the principal parts that were burned, and that were exposed at the time Mrs. B. saw her. She was so horrified at the sight that she did not sleep for over twenty-four hours.

In his excellent article on "Teratology," in the Reference Handbook of the Medical Sciences, Vol. vii, p. 8, Dr. G. J. Fisher gives the only reference to this form of monstrosity I have been able to find. He gives a cut of a child in which all the extremities are absent, taken from "Hastings, Trans. Med.-Clin. Soc., Edin., Vol. ii, p. 39, pl. 1, fig. 2, Edin., 1826," then makes the following statement: "Amelia, or want of all the extremities, is quite rare. Instances of entire absence of both upper or of both lower limbs are less rare, though not common. The first rudiments of limbs appear in the embryo about the beginning of the second month, being merely slight eminences of embryonic buds. Arrest of development at this stage of evolution would produce the anomalies under consideration." The part that maternal impressions held in the causation of this deformity, I will leave for the reader to speculate on. The scare occurred at about the time when the extremities are commencing to develop in normal pregnancies.

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DERMATITIS AND VESICATION CAUSED BY EUPHORBIA MARGINATA, PURSH.

I have had, of late years, an unusual number of cases of what I took to be "ivy poisoning," and in many cases have been unable to trace any possible chance of exposure of patient to *Rhus Toxicodendron.* But as the cases all yielded to the usual treatment for ivy poisoning, I supposed that a small vine had sprung up about the premises where it was not noticed. About 1875, a number of our lovers of flowers purchased from florists seeds of a showy plant, under the name of "Snow on the Mountain" or "Mountain of Snow." Its floral leaves and bracts are bordered with white, making it very attractive. It was well pleased with our climate and soil, and soon escaped to the streets and roadsides, and is now more abundant than dog fennel. It proved to be *Euphorbia marginata,* Pursh, a native of the plains of Kansas and Nebraska, and like the rest of the spurge family, its juice is milky and gummy. During the summer of 1890 it happened that, in handling some fresh specimens of this plant, I accidentally rubbed a considerable quantity of the milky juice on my neck and under the collar. This produced a decided burning sensation during the afternoon. The next morning I found the skin, as far as the juice had gone, red and thickly studded with a pimply eruption, which subsided in the course of several days by the use of a lotion of sugar of lead and laudanum. I then suspected that here was an explanation of my frequent cases of ivy poisoning, and further observation has demonstrated this to be true.

Its gaudy appearance makes this plant very attractive; children in their plays, and others in collecting bouquets, pluck and handle it frequently. In many persons the juice produces a severe irritation of the skin, resulting in a thick, fine eruption of a purplish-red color, presenting very nearly the same appearance as a case of poisoning by *Rhus Toxicodendron;* except that the eruption is a little finer in the former. I have seen a few cases, in children with unusually delicate skin, where the epidermis was raised, and the whole surface, as far as the juice had spread, was blistered. There is usually much complaint of a burning sensation in the parts affected.

In looking up the properties of this order, I find that a number of the species are credited with producing similar effects. The manchineal, a native tree of the West Indies, is said to produce blisters, followed by bad sores, when it touches the skin. The well-known croton oil is obtained from *Croton Tiglium,* also a euphorbiaceous plant. *Euphorbia resinifera,* Berg, produces the highly irritant gum *Euphorbium.*

I am induced to put my experience on record for the benefit of other members of the profession who may be having an unaccountably large number of cases of ivy poisoning, that they may be on the lookout for cases arising from this cause.

REPORT OF THE SURGICAL CLINICS,

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College,

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

September 27, 1890.

This being my first clinic, let me say a word to the students who are just commencing the study of surgery, and hope at some future time to become surgeons.

While it is true that clinical lectures are the best manner of teaching either medicine or surgery, and that no one can be a safe practitioner without such teaching, it is also true, that the student of surgery who believes that by simply witnessing surgical operations, he will thereby become a good surgeon, will find in the end that he has made a mistake. There is a certain dramatic attraction about a surgical operation, which charms the student and rivets his attention, but that student who has not the perseverance and industry to follow up and study the details of the after-treatment, although he may make a brilliant operator, will never make a safe surgeon.

Let me, therefore, urge upon you the necessity of keeping careful watch of the results following operations. In this way, and in this way only, will you be able to judge whether any benefit has been conferred upon the patient. The patients upon whom I shall operate will be carried into the wards of the hospital, where you will all have an opportunity to witness the after-treatment. If the result should not be successful, it will be a benefit to you to find out the cause of the failure, and to witness the post-mortem examination if possible.

During the winter you will have the opportunity of witnessing a great variety of operations; some of them trivial and attended with but little danger to life, others of the gravest character. They are all of equal interest to you. The first case which I bring before you is one upon which I will operate at a future day. It is one of

EPILEPTIC CONVULSIONS FROM INJURY TO THE BRAIN.

This man, æt. 27, eight years ago, at a picnic, was shot in the back part of the top of his head, a little to the left of the median line, with a ball from a 22-calibre pistol. Dr. Duff removed the fragments of bone, but did not find the ball. The direction of the ball seemed to be toward the centre of the brain. Last May he was seized with epileptiform convulsions, of which he has about two a week. He comes here to-day seeking relief from the convulsions. It is doubtful whether the ball could be found now. It may be either the ball, or some spicula of bone, that is causing the convulsions. Recently an instrument has been invented to locate metallic substances lodged in the body, called the "induction balance." It was tested, but failed, in the case of President Garfield. Since that, it has been improved somewhat, and it may be of some value now. I might also say, that when Dr. Duff trephined and removed the fragments of bone, he also removed a wad and a piece of the hat from the wound. I advise the opening of this wound, for which purpose the patient agrees to come here next Saturday.

OPERATION FOR FISTULA IN ANO.

This man suffers from fistula in ano, which is common in persons with phthisis pulmonalis. I have not examined this patient whether he has phthisis or not. It has been deemed unwise by some surgeons to operate when thus affected, but I have always found it beneficial to the patients to relieve them. Fistula in ano is sometimes caused by abscesses near the anus caused by pieces of fish-bone, etc., lodging within the internal sphincter. There are three kinds of fistula in ano, viz.: complete, blind internal and blind external. There are sometimes as many as half a dozen fistulæ.

We apply Clover's crutch to patients when operating on the perinæum. An abscess in the rectum should be opened early. The reason a fistula does not heal is on account of the mobility of the parts, and if there should be any attempts at healing, they are torn in the act of defecation. The first thing I recommend in operations for hæmorrhoids or fistulæ is the dilation of the sphincter, thus paralyzing it and putting the parts at rest. In preparing a case for operation, a purgative should be given the night before, and an enema before the operation, to thoroughly empty the lower bowel. I now cut open the fistula, then paralyze the sphincter by the insertion of the thumb of my left hand and the index finger of my right, and making considerable force laterally.

Finding the cellular tissue infiltrated with pus, I scrape it out with a Volkmann's spoon, and after cleansing the parts with a solution of bichloride of mercury (1–2,000), I pack it with iodoform gauze.

OPERATION OF EXTERNAL URETHROTOMY.

This patient is suffering from a number of urinary fistulæ, and is a more serious case than the former one. When he was a young man (seventeen years ago) he had a severe gonorrhœa of six months' duration, and as a sequel of which he contracted a stricture.

About six months ago his water was entirely arrested, and likely he had a rupture of the urethra. Urinary fistulæ are ordinarily cured by dilating the stricture. I propose to perform perineal section or external urethrotomy in this case, to divide the stricture.

I passed a filiform bougie a few days ago. I pass it now again, and will pass a tunnelled sound down over the filiform through the urethra, and then cut down to the groove in the sound and divide the urethra. This is the operation introduced by Mr. Gouley, of New York. If I cannot introduce the bougie, I will postpone the operation until such time as I can. No. 8 tunnelled sound is used. Some surgeons let a catheter remain after this operation, but I believe it best not so to do, for it is likely to excite cystitis, and the urine is as likely to pass from the bladder around the catheter as through it. I will now locate the stricture. I will first inject some sweet oil, which is better than oiling the instruments. Taking an olive-pointed bougie, which is the best to locate stricture with, I pass it in about 5 inches.

I have now passed a filiform whalebone guide into the bladder and a tunnelled sound down over it. The median line is said to be the line of safety. I now make an incision in the median line within ½ inch of the anus, and enlarge the incision liberally.

Owing to the infiltration of the parts with urine, they are not in their correct anatomical positions. I have now exposed the groove of the guide, and will now pass a loop of thread on either side of the urethra in order to separate the parts, and with a small-bladed knife I will follow the guide and divide the stricture.

I insert several stitches to hold the parts in apposition, and then allow it to heal by granulation.

October 4, 1890.

FRACTURE OF THE OLECRANON PROCESS.

This young colored man, those of you who were here last winter will remember as the patient for whom I trephined his skull and removed a cyst. While carrying brick, he fell from a height, injuring his head, causing paralysis of one side of the body; in this condition he lay in bed for ten months, acquiring a number of bedsores. In two weeks he was able to walk (after the operation), and some time afterwards he was discharged from the hospital as cured.

He went to work again at his former occupation, and a scaffold fell with him. He fell on his elbow, fracturing the olecranon process. The symptoms of fracture, as you know, are subjective and objective.

In this case the subjective signs are pain, history of the accident and loss of power to extend the arm. The objective signs are, the fragments being drawn upward by the triceps and a depression at the back of the joint. We will dress it with a straight anterior splint, padding it well opposite the joint, so as not to keep the arm completely extended. The splint will be secured by strips of adhesive plaster and a bandage. Passive motion will be commenced in about three weeks to restore the mobility of the joint.

FRACTURE OF THE TIBIA AND FIBULA.

This patient fell and a wagon run over his left leg, fracturing it above the ankle and producing two wounds of the soft tissues. After washing the wound thoroughly with an antiseptic fluid, I cover it with a piece of lint soaked in the compound tincture of benzoin. In a case of this kind, when the wound is not large, it is not well to probe when in doubt as to whether it is a simple or compound fracture; because if it is simple you may convert it into a compound fracture. A compound fracture is much slower in healing when due to direct violence than when due to indirect.

Do not set a limb too straight, but set it with the natural curve of the bone. This leg will be kept in a fracture box for a week or ten days, and then a plaster dressing put on.

October 15, 1890.

AMPUTATION OF AN ARM.

This man had his right arm caught between the bumpers while coupling cars, and crushed above the elbow. This accident occurred this morning at 1 o'clock, and he was brought here at 8 o'clock.

On looking at the arm, we find a large lacerated wound on the inner side of the arm. On introducing my finger in the wound I find the bone comminuted and the muscles pulpefied, and can pass my finger directly into the joint; so you see the arm is really only hanging by the skin. I find no radial pulsation, consequently the brachial artery has been wounded. After you have determined to amputate a limb, the next thing is to determine where to amputate.

It should always be done in sound tissue if possible. In this, the circular operation which I propose to perform, I make the incision about 2½ inches below where I want to saw off the bone. By the first incision I divide the skin and fascia, then, drawing back the skin, I make the second circular incision and cut to the bone. Then, using a retractor to keep the bone dust away from the tissues, I saw off the bone, first drawing the saw from the heel to the point to make a track.

Then next I look for the vessels, and control them by torsion.

A good plan to stop the oozing of the small vessels is to press on a soft sponge soaked in hot water. It is getting customary, when antisepsis is thoroughly sought for, to dispense with the drainage tube, but I prefer to use it so long as I have success as in the past. It used to be customary not to sew up the flaps for two hours after an amputation, at which time the flaps would be glazed and there would be no oozing whatever. The drainage tube should be so placed that one end should be at the most dependent part, and for this purpose I will put it in independent of the wound, making openings through the flaps. I prefer to put in a row of very deep sutures and one superficially, the deep ones to keep the wound in contact, and the superficial ones the skin. This wound will be thoroughly washed and covered with bichloride gauze. In forty-eight hours we will remove the drainage tube. If there should be a rise of temperature above 101° at any time, the dressing should always be removed and examined for fear there is some infection going on. We put a safety-pin in each end of the drainage tube, to prevent it slipping into the wound. It is necessary, before putting up the wound, to press out all the bichloride solution, as a quantity left in the wound might poison the patient. The wound is now dressed in the usual antiseptic manner. When he is put to bed the stump should be put in an elevated position.

When he comes out of the anæsthesia and has much pain, he will be given ¼ gr. of morphia.

October 18.

I bring before you to-day the patient on whom I amputated an arm at our last clinic, three days ago. The dressing has not been disturbed since. I want you to see every step in this case. As I stated in my last clinic, the temperature of the patient is relied on for indications for taking down the dressings. The temperature of the day following the operation was: morning, 100.4°; evening, 102.2°. On the second day the morning temperature was 99.4°, the evening 100°, and to-day it is normal.

We always expect some elevation. We will remove the dressing, and also the drainage tube, which has served its purpose. To remove the drainage tube, I cut off the safety-pin from the upper end and draw it out by its lower extremity; I then direct some bichloride solution through the wound. You see that the wound looks healthy. As it is too early and there is no tension on the sutures, they will not be removed to-day. I will redress it now in the usual antiseptic method, using a crinoline bandage on the outside. It will now be left a week. He has had no medicine except two hypodermic injections of morphia after the operation.

The second case I bring before you to-day is the patient on whom I performed an external urethrotomy three weeks ago to-day. He passes all his urine by the urethra now, which he had not done for twelve years. I passed a sound every day, since the operation, through his urethra, and will instruct him to pass one occasionally, to keep the urethra dilated. I consider this a very good result.

LITHOTOMY.

This man is suffering from a stone in the bladder. I propose to do the median operation in this case, which is only applicable in small calculi. The raphe is called the "line of safety," not being traversed by any important vessels or nerves. In this operation the forefinger of the left hand is inserted in the anus against the apex of the prostate. Having said this much I will proceed with the operation. It is well to have some water in the bladder, and his bladder being empty now, I will inject a small quantity. Clover's crutch is sometimes applied to a patient on whom this operation is performed, but as it is somewhat in the way of the operator we will firmly bind the wrists to the ankles with a bandage. The buttocks are brought to the edge of the table, an assistant on each side holds the thighs apart. I will now introduce a sound and search for the stone, which I found a few days ago. Withdrawing the sound I introduce a staff and have an assistant to hold it firmly, hugging the upper surface of the urethra.

I introduce the knife directly in the median line, one-half inch in front of the anus, and continue the incision to the anterior extremity of the prostate. I thrust the forefinger of my left hand into the wound, slip the knife in over it, make its point slide along the groove toward the bladder, dividing the membranous part of the urethra and the edge of the prostate. I now withdraw the knife and introduce my left forefinger gently along the staff. Next the assistant removes the staff and my finger enters the bladder and its point touches the stone. I next introduce the forceps over my finger, and you see now I have removed the stone. I examine the stone to see if it has any facets, which would indicate more than one calculus but do not find any. We will now wash out the bladder and close up the wound. This operation (median) was a favorite one of the late Dr.

Albert G. Walter of this city, who in sixty-four operations had but one death.

October 25, 1890.

REVIEW OF SOME CASES OPERATED ON.

I show you first to-day the man on whom, one week ago to-day, I performed the median operation of Lithotomy and extracted a calculus. He is still passing his urine by the wound as well as by the urethra, which will continue yet for a short time. He is feeling well, as he says, and the wound as you see is healing kindly.

The second case I bring before you to-day is the man on whom I amputated his right arm, ten days ago, in your presence. You remember it was a severe crush of the arm, caused by being caught between the bumpers of the cars, and I amputated it, by the circular operation at the middle third. It has not been dressed since a week ago in your presence. It is my rule not to dress stumps more frequently than I have in this case unless there should be a rise of temperature over 100 degrees. This man has been eating and sleeping well since the operation. You remember I put in two rows of sutures—a deep and a superficial one, to hold the deep parts as well as the skin in apposition. You see it has healed by first intention. The silver sutures are still in place, but they have served their purpose and hence I will remove them to-day. There is one objection to wire sutures, that is they are a little painful to remove. You take hold of the sutures with the pliers in one hand and cut them by the other, and then rotate the sutures when withdrawing them instead of drawing them straight out. After irrigating the stump with a solution of bichloride I put on a compress and redress it. This patient will soon be discharged from the hospital. The third case I bring before you to-day is a young man on whom I did a double amputation ten weeks ago to-day. It used to be the custom to amputate at the "point of election", which is about five fingers breadth below the knee, for any and all injuries of the leg or foot below the knee necessitating amputation. In this case I saved just as much as possible of this patient's limbs; the one, as you see, was amputated slightly below the so-called "point of election," and the other a little above. Mr. Hey advocated the amputation at the tarso-metatarsal joint, for injuries of the metatarsus requiring amputation, which is since known as Hey's operation. Mr. Syme advocated the amputation at the ankle joint and Mr. Chopart at the medio-tarsal, both amputations now bearing the names of their first advocates. The rule now is to save as much of the body as possible, but there are exceptions to this rule.

Some time ago I was called to see a boy with a smashed hand. I could have saved the carpal bones, but it has been found that when it is necessary to invade the carpus at all, it is better to go at once to the radio-carpal joint, and amputate at the wrist, which I did in this case.

November 1st, 1890.

OPERATION ON HOUSE MAID'S KNEE.

I want to show you first a case of house maid's knee; this will be a frequent disease in your practice, and it is important that you should know how to manage it. This is an inflammation of the bursa of the knee, between the patella and the skin, it may occur anywhere on the patella, ligamentum patella, or the tibia; as in this case it comes from pressure, this girl being a servant and doing much work while on her knees.

A similar disease may occur in various parts of the body where pressure is likely to occur and where you find bursæ. There is one at each angle of the jaw, one at the point of the chin, also over the acromion of the scapula, over the olecranon process, over the trochanter major, the condyles of the femur, and, as I have said, on the ligament of the patella. In miners who work with their elbows resting on the floor, we have frequently inflammation of the bursa over the olecranon process which is called in that case "miner's elbow." In England those engaged in weaving are required to remain in the sitting posture during their work, causing inflammation of the bursæ over the tuberosities of the Ischii, which is commonly called "weaver's bottom." It is just such an inflammation of the ball of the great toe that what we call a "bunion." These are natural places for them to occur but they may occur almost anywhere where pressure is continously applied. These bursæ or cysts contain serum at first, but by the gradual deposit of organized lymph in the interior of the sac, the cavity is obliterated. The treatment consists of rest to the part and cold applications, or the application of discutients as: blisters and painting with tincture iodine; or in tapping, followed by the injection of iodine. Sometimes these sacs contain rice-like bodies. When these inflamed bursæ are solid, the proper thing to do is remove them by excision, taking care not to injure any neighboring articulation. I now make a longitudinal incision over this bursa, dissect out the contained mass, scrape the cavity with a Volkmann's spoon, then insert a small drainage tube and close the wound with sutures and apply an antiseptic dressing. I will put on a posterior splint to secure perfect rest of the limb. And as the extended position of the limb is very uncomfortable, I will place a large wad of cotton in the popliteal space before applying the splint. A ganglion is somewhat analogous to a bursa, it is developed in connection with the sheath of a tendon. The ganglia contain a clear fluid and rice-like bodies, which are formed of a compact fibrinous substance, due to previous inflammation. The treatment consists in the rupture of the ganglia by forcible compression with the thumbs or by a sudden blow with a book. If these means fail, iodine may be injected, or a seton established or excision, which is attended with some danger of inflammation. As I used continuous sutures in this case allow me to say a word regarding them. In continuous sutures, tie the first stitch, then proceed as a seamstress would in sewing, making the stitches one-fourth inch apart. Always see that each stitch has the right degree of tension. For the purpose of securing the last stitch, draw the thread through double the last time and then you can tie it. These sutures should only be inserted when you use drainage tubes, because no drainage can take place between the stitches. I will show you next the patient on whom I amputated an arm about two weeks ago. I have shown you almost the entire treatment of this case. You see it is healing nicely and making a good stump. It is discharging a little yet. This man is virtually well and will leave the hospital to-day to go to his home.

INFLAMMATION OF THE MASTOID CELLS.

The third case I show you to-day is a patient with a swelling behind his left ear, and it is a most interesting and instructive case. The patient suffers some from nasal catarrh. Twelve weeks ago this patient had ear-ache and for eleven weeks had a running at this ear. This case is similar to that of the Hon. Roscoe Conkling of New York City, in whom you will, no doubt, remember, it was the cause of his death. When you find severe pain in the ear, and pain, tenderness and swelling behind the ear, you can suspect pus in the mastoid sinuses. The most important measure of treatment is to make an early incision down to the bone in a longitudinal direction, three fourths of an inch behind the ear and extending the whole length of the mastoid process. This is known as "Wilde's incision." Mr. Wilde is a native of the old country and the father of Oscar Wilde, who visited this country several years ago. I now make an incision as you see, down, to the skull over the mastoid process. I have severed the posterior uricular artery in this incision. I now with a drill perforate the antrum, one-fourth inch posterior to the meatus externus, in a direction upwards and inwards hrough the outer shell of bone; having now reached he antrum you see the pus swelling out of it. Having now established a free opening with drainage, I will not go any farther on account of the important tructures, which might be injured. I will pack this wound with iodoform gauze and apply an antiseptic dressing.

November 8, 1890.

REVIEW OF SOME CASES OPERATED ON.

I will show you first to-day the lady whom I had before you last Saturday, and on whom I operated for the removal of an inflamed and enlarged bursa over the ligamentum patellae, known as housemaid's knee. I want you to get interested in these cases and see them in their different stages, in order that you may be able to follow them to their termination. The dressing has been removed but once since you saw it and that was three days after the operation, when Dr. Boggs, the resident physician, removed the drainage tube.

This lady has been getting along nicely; by her temperature chart you will see that her average morning temperature was 98 and two-fifth degrees, and the evening 99 and two-fifth degrees. You remember this was a disease of eighteen months standing. As I told you at our last clinic these bursæ occur normally in some situations of the body and they may become inflamed, enlarged and painful, when continued pressure is made to a part.

You remember I sewed this wound with continuous catgut sutures and I will remove them to-day. The proper way to remove a continuous suture is to cut each stitch and then pull them out. Although there is no suppuration in this wound, it will not heal by first intention. It will not be necessary to reapply the posterior splint, because, as you see, when I flex the limb it causes no tension or tendency of the wound to gape. I will put it up in an antiseptic dressing as before. It will be dressed every other day.

The lady will be allowed to get out of bed in a few days, instructing her to be careful not to rest the full weight of her body on it for some time.

ABSCESS IN MASTOID CELLS.

I now bring before you the man that had an abscess in the mastoid cells and for which I cut down and perforated the antrum last Saturday, to allow of the escape of the contained pus. This trouble in this case started from an inflammation of the middle ear, or otitis media, and extended to the mucous membrane of the mastoid cells, the largest of which is called the antrum. In infancy it is a large air-cell and the only cell that is present then. All of these cells connect with the middle ear, and when this pus does not find other exit it is likely to penetrate these cells, causing intense pain.

(*To be Continued.*)

THE ANCIENT USE OF ANTISEPTICS.

BY EDWARD ANDERSON, M.D.,

OF ROCKVILLE, MD.

During the meeting of the Medical and Chirurgical Faculty of Maryland, held in Rockville last November, I called the attention of the members to page 98 of Bartholomew Parr's London Dictionary, reprinted in Philadelpha in 1819, where he says—calomel mixed with starch and strewed on a pledget of lint is perhaps the best application to the stump of an amputated limb, placing mercury in the same category with the knife and the ligature.

The starch, of course, was added to give bulk, so that a large surface might be covered without the risk of ptyalism. Parr also recommends pyroligneous acid in the treatment of wounds. I rarely use anything but calomel as an antiseptic and I defy any one to produce a better.

My uncle, the late Dr. John W. Anderson, of this town, sixty years ago invariably used either calomel or brown sugar in the treatment of wounds.

Antiseptics may not have been so generally used as now, but some surgeons, no doubt, were as scrupulous in their use a hundred years ago as any at the present day.

The antiseptics, common salt and turpentine, have been employed in domestic practice from time immemorial; salt in the treatment of incised, and turpentine in that of contused wounds.

Lister has said so much about antiseptic surgery that many think that he originated it; he no doubt has encouraged the use of it, but is certainly not entitled to the appellation of—"Father of antiseptic surgery."

A RARE LUXATION AT THE ELBOW.

BY J. J. CONNER, M.D.,

OF PANA, ILL.

Mr. T. P., aged 22, on October 11, 1885, about the middle of the afternoon, while in company with another young man, was driving a buggy along the line of the Wabash railway near Palmer, Ill., when the horse took fright at a passing train and ran off, upset the buggy and threw them both out; T. P. alighted upon his hands and head. On examination there was found on him a slight laceration of the skin just below the right corner of the mouth and a small contusion of the right cheek. The right elbow was enormously swollen on the inner and anterior side just below the crease of the elbow joint, or rather where the crease should be; the arm was bent outward, *i. e.*, convex on the inner side and concave on the outer side. *The head of the radius was found to be under the tendons of insertion of the biceps muscle.*

Treatment consisted in extension and counter-extension, and at the same time the head of the radius was pushed out from under the tendon of the biceps muscle with the thumb applied to the inner side of the head of the radius. Motion there was perfect without one bit of crepitus. The arm was dressed in a simple cooling lotion for two or three days till the swelling had pretty well subsided, when a plaster-of-Paris splint was put on. This, owing to the obtuse and perverse nature of the patient, was only worn for about one week, when he tore it off and in three or four days more went to using his arm again, regardless of my advice and protestations. Recovery was perfect.

It would seem as though such an injury as this could not happen without some form of fracture, but I firmly believe there was none.

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY H. GRADLE M.D.

LECTURE I.

The subject of these lectures will be the consideration of all the occurrences and conditions, both in the body and outside of it, which lead to disease. It is not the intention to detail the cause of each individual disease, but to discuss in general the factors and influences which can injure the organism. The object of such a general review of etiology is to encourage in you the habit of analyzing every clinical case as to the cause and condition upon which the morbid process or processes present depend. For you will soon learn in practice that the recognition of the name of a disease, its mere diagnosis, is not the key that unlocks all its secrets; but that a full insight into its nature depends as much on the knowledge how the disturbance was brought about as on the recognition of the anatomical changes involved. To the logical mind there can be no doubt, that the etiological point of view will sooner or later be the starting point of therapeutics during active disease. For when we consider the wonderful reparative power of the animal organism, its ability to recover from all but actual destructive lesions, as soon as an injurious cause has ceased to act, we can understand that it must be the ambition of the therapeutist to be able to remove or render harmless the causes of morbid disturbances, and to leave the return to the normal state to the self-righting tendency of living system. Such a view does, of course, not preclude the necessity for the surgeon's knife and mechanical devices in all those instances where we have missed the proper time to prevent destruction of parts, or where the causes of disease, even if known, are beyond our control.

In order to use the term "cause of a disease" without vagueness, a few definitions are indispensable, even if they seem trite. We speak of disease whenever the processes of life are deranged in any part of the body. The occurrence which leads to this derangement is hence the cause of the disease. In other words, the manifestations of disease are the reaction of the living tissues to an influence which for the time throws out of gear the normal mechanism of the cells it has affected. According to this definition there can be but one cause for each individual disease. But you will find in most of the text-books various "causes" mentioned in connection with separate diseases. This, however, is a misnomer. All those influences and circumstances which must be taken into account in considering the origin of any disease, besides the one actual cause itself, should logically be called "conditions." The study of all conditions, which either favor or interfere with the action of disease-causes is a very important part of etiology. Often, indeed, a clear understanding of the conditions which determine the occurrence of a disease are of greater practical importance than the identification of the cause itself. In the study of processes as simple as the reaction between two chemical bodies, we cannot ignore the surrounding conditions. Thus, if we wish to demonstrate the blue color obtained by the reaction of iodine upon starch, we must remember that the desired result can be obtained only in cold, not in hot, solution. If we consider how very much more complex than the reaction just quoted are the chemical processes of living matter; how numerous and how unstable are the chemical constituents involved, and how intimate are the relations of one part of the body to another, we can infer how very much more sensitive to all sorts of influences and conditions must be the physiological mechanism, as well as the reaction of the body to injurious impressions made upon it.

Many authors call the one cause of a disease "the exciting cause," and the various influences which favor it "the predisposing causes." Even this term must be objected to, as it can only be misleading to call a cause *that* which is merely a condition, upon which a reaction depends. Besides, we must take into account in etiological studies not only the "predisposing" conditions, but also all factors which interfere with the "exciting" cause.

A logical classification of our subject is not only a gain in convenience, but more so even in its practical applicability. The classification I shall here adopt you will find particularly useful as a guide for therapeutic action. Of course, it becomes useless in those instances where we are as yet completely in the dark as to the cause of an individual disease. From an etiological standpoint we can divide all ailments into

1. Primary diseases.
2. Secondary diseases.
3. Anomalies.

A primary disease is one in which the diseased part is acted upon by some cause originating outside of the body. Thus, a pneumonia is a primary disease, because it results from the invasion of the lung by a microörganism coming from the outer world. Other instances of primary diseases are the actions of poisons, are sunstroke, are syphilis. In all these cases the cause does not preëxist in the body. In secondary diseases, on the other hand, the cause is not an occurrence outside of the body, but a preëxisting morbid condition, or anomaly, within the organism itself. As instances of secondary affections may be quoted thrombosis of an artery, reflex neuroses, paralysis of a nerve from a tumor pressing upon it, strangulation of the intestines in a hernial sac.

Although these instances mentioned represent pathological occurrences that seem to have nothing in common, yet, from an etiological point of view, we can put them into one group, as distinguished from primary diseases, by the fact that they are not due to any cause coming from the outside, but that they can only occur in consequence of some previous anomaly within the organism. There may, of course, be some conditions of the outer world which favor their occurrence, but these are not the real cause of such secondary affections.

Anomalies must be distinguished from diseases, both primary and secondary, from an etiological as well as from a therapeutic point of view. A disease is an active derangement, which ceases within a short time after its cause has ceased to act. An anomaly, however, is a deviation from the normal structure of a part or organ which persists after the cause leading to it has ceased to act. A disease may terminate either in perfect local recovery, or it may result in a permanent lesion or anomaly. A destructive disease, for instance, causes the loss of a part, or, as the case may be, a cicatrix, while an irritative disease may lead to a permanent new-formation. But not all anomalies are the results of disease; they may have been produced by mechanical causes, as, for instance, deformities or by interferences with the normal growth, as congenital anomalies. Practically, this distinction between diseases and anomalies is of importance, as in the latter group of ailments we cannot accomplish anything therapeutically by attempting to remove a cause which is no longer active or present, while the anomaly itself may be the source of great annoyance, or even the cause of further secondary disease. Of course, the combination of anomalies with still active disease may be encountered in practice as well as the most complex chain of coexisting primary and secondary affections. It is particularly in the combination of diseases which so often appears to the clinical observer as a morbid unity or single affection, that the etiological analysis proves of service; for, by [illegible] between the primary and the [illegible] in a given case, and by keeping in view the features incident to the main disease, and separating them analytically from coexisting complications, we are in the most advantageous position to interfere therapeutically. The etiological standpoint also shows us that the same morbid lesion may be due to different causes in different instances, and that it may be a primary disease in one case, but a secondary affection in another. This knowledge, of course, will influence both our prognosis and treatment.

The causes of primary diseases, to which we shall confine ourselves first, may be ranged under the following heads:

a. Physical causes.
b. Chemical causes.
c. Infection or parasitism.
d. Various influences resulting in overaction of the nervous system.

a. Physical causes include all mechanical influences resulting in wounds, contusions, fractures and dislocations. Even in such simple etiological problems as the fracture of a bone in consequence of mechanical violence, we must take into consideration the "conditions" as well as the cause proper, for a full explanation of the results. Thus, for instance, the same force, acting in the same direction, will cause in an adult a fracture near the end of a long bone, while in a child it would have resulted in a separation of the epiphysis from the shaft. Again, a blow which would not damage a healthy bone may fracture another one rarefied by previous disease. In cases of injury from mechanical causes we must also clearly distinguish between the original lesion, and the subsequent infection which may complicate it. The injurious mechanical influence may be both the actual cause of a comparatively trifling disturbance, and the condition permitting or determining a more important subsequent disease due to infecting parasites, as seen, for instance, in tuberculosis of joints following slight trauma, or on a trivial scale in inflamed corns and bunions.

Other physical causes of disease are the effects of heat and cold upon the tissues. A special form of heat influence is seen in sunstroke. As in a body of men exposed to the same solar radiation, perhaps only a few may suffer from this disease; we have here again an instance of conditions either favoring or, as the case may be, opposing, a disease-cause. Thus a dark hat, by absorbing heat, would enhance the likelihood of sunstroke, whereas a light one would reduce the danger. But internal conditions also come into play. Physical exhaustion is known to predispose to the trouble, while a normal cerebral circulation lessens the possibility of overheating the brain.

Electric currents of the strength used in modern industries, or lightning itself, furnish another instance of a physical cause, in this case capable of disorganizing the nervous system.

b. Chemical causes of disease are illustrated by the action of poisons. The present etiological review is not the place to dwell upon details of this subject. Attention, however, may be called to the fact, that a number of poisons produce not only temporary functional derangement, but may also result in structural pathological changes, which can outlast the presence of the toxic agent. Amongst these may be mentioned the necrosis of bones and the yellow atrophy of the liver due to phosphorus, the nephritis from chromic acid, the inflammation of the gums, the pseudo-membranous ulceration of the bowels and the calcareous deposits in the kidney as the result of mercurial poisoning. It is especially in the nerves where inflammatory changes and subsequent atrophy can be observed from the action of various poisons. Of metals, lead and arsenic may act as causes of neuritis of peripheral nerves. Bisulphide of carbon and illuminating gas have also been known to cause symptoms indicating neuritis.[1]

Chronic abuse of alcohol and tobacco is a not infrequent cause of neuritis, particularly of the optic nerve. It is interesting to note that optic neuritis is oftener the result of the toxic influence of alcohol and tobacco combined, than of either poison alone. Even a single excessive dose of quinine has caused, in a number of instances, impairment of sight which, according to experimental researches,[2] is due to atrophy.

In the consideration of poisons from an etiological point of view, special mention must be made of the toxic products developed in different articles of food in consequence of decomposition. Milk and its derivatives, cheese and ice-cream, furnish the most frequent inst[illegible] by bacterial products. The most [illegible]ese has been described by Vaughan as tyrotoxicon, probably chemically identical with diazobenzol. It is not always possible to distinguish clinically between poisoning due to the decomposing action of bacteria upon food outside of the body, and the effects upon the system of certain bacteria themselves contained in the food, which may continue their chemical activity in the intestines, or even invade the tissues. Instances of poisoning from tainted meat, fish and sausages, are also not rare. A few years ago, many cases of disease and even death were reported in German literature, from the consumption of fresh, but diseased, mussels.

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[1] See Middleton Goldsmith Lectures by Allen Starr, on Neuritis, Medical News, 1887.

[2] De Schweinitz, Transactions of the American Ophthalmological Society.

Amongst the chemical causes of disease must be also taken into account the negative action of any of the alimentary principles, that is to say the result of insufficient supply of any one element of food. For the tissue-change necessarily leads to the incessant destruction or elimination of all the chemical material in the body, and if any one of the needed elements is withheld, death is as inevitable as if all food supply were cut off.

Insufficient feeding, however, short of starvation, is not so much an actual cause of disease as a determining condition. For the imperfectly nourished tissues cannot resist other damaging influences as well as the body in physiological vigor. The one disease usually referred to incorrect feeding as its cause, viz.: scurvy, is much more probably due to an infection by micro-parasites, which, however, is possible only under circumstances of malnutrition.

c. Infection, or the existence of parasitic beings on the surface of or within the body of men, constitutes the most important and frequent cause of disease. The parasites are either *animals* or *microscopic plants*. The former are usually the least serious instances of parasitism. Insects or mites may thrive in the hair or burrow under the skin, various varieties of worms may inhabit the intestinal canal, and yet not enough disturbance result to be called disease in common parlance. But more dangerous instances of animal parasitism are also known. The ordinary round worm has caused death by perforating the bowels. A certain form of pernicious anæmia has been traced to the presence of the anchylostoma in the intestines. The entrance of trichinæ into the body is a serious and often fatal occurrence. Filariæ in the blood and lymph-channels are the cause of wasting chyluria, and echinococcus cysts often demand grave operations to avert a fatal issue. Yet from the standpoint of general etiology it is superfluous to dwell any longer on the subject of animal parasites, at least as far as the higher forms are concerned. For there is but a limited aspect common to the different instances, while the details about the biology of the parasites, their intermediary hosts and their mode of entrance into the body can be found in all special works.

Recent researches, however, have shown that animal parasites of the lowest order are probably a more important and frequent cause of disease than had hitherto been suspected. Thus in tropical dysentery an amœba has been found in the colon in such constancy and numbers, that it can be regarded as the cause of that disease. Another instance of an animal parasite causing a very common affection is the "plasmodium" or protozoon found within the red corpuscles in malaria. Protozoa have also been met with in various diseases of animals, but neither the biology of these microörganisms nor their relation to the morbid processes is as yet well known.[3] Various recent claims as to the demonstration of protozoa in malignant growths are more suggestive than convincing.

Amongst the *vegetable parasites* of man, the higher fungi or *hyphomycetæ* require but a passing notice. While various species of fungi have been demonstrated as the causes of different skin diseases, they have been but rarely met with in deeper tissues. In view of the ease with which they can be detected in the midst of animal cells it is not likely that future researches will bring them into greater prominence as causes of disease than we now attribute to them. Further reference to them would be but a repetition from text books on skin diseases.

Of all causes of diseases *bacteria* are the most important in the light of our present knowledge, as they are responsible for the majority of primary diseases, and indirectly for numerous secondary affections. Ever since their discovery 200 years ago the view that they might be the cause of various diseases has often been mentioned, but it rested on mere speculation until Pasteur demonstrated (within a few years prior to and after 1860) the rôle of microörganisms in fermentations and putrefaction.[4]

From this time on there accumulated a flood of observations on bacteria in diseases. But all these researches were merely suggestive; in no instance did they amount to the absolute demonstration of the causative relation of the microörganisms to the disease, until Koch gave the first convincing proof in the case of anthrax in 1876.

Since that time the methods for the study of bacteria have been so perfected by Koch and his school, that our present knowledge concerning the relation of bacteria to disease rests on as firm a basis as any facts in medical science. The opposition against the germ theory, justifiable while it was a mere unsupported theory, has now practically ceased. Whenever a writer of the present day dares to belittle the work of competent investigators his arguments invariably betray his want of familiarity with the standard facts.

The proof that a given disease is due to microörganisms rests on the demonstration of a well-characterized variety of microbes in some part of the diseased body, corresponding in number and distribution to the character of the disease, and not found in health or other diseases. The parasite must be present in every case of that disease if sought for at the right time and with the proper methods. If the patient dies after the disease has passed its height, the bacteria may have been destroyed or eliminated and their absence does not invalidate the conclusions based on their detection while the disease is still active.

The distribution of the parasites must correspond to the localization and character of the disease. In most instances they are limited to some one organ or cavity of the body and the derangement of the whole system results from the absorption of poisons generated by the microbes. Thus in cholera the characteristic bacilli are found ordinarily only in the intestinal canal. In diphtheria the bacilli peculiar to the disease exist only in the pseudo-membrane. If the patient dies of a later complication the diphtheria bacilli may no longer be present at all, while other bacteria causing the complication may be found in different parts of the body.

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[3] See an extensive review on Pathological Gregarinæ by L. Pfeiffer in Zeitschrift f. Hygiene, vol. iii, p. 469, vol. iv, p. 402, and vol. v, p. 363.

[4] See the History of the Germ Theory in Löffler's Vorlesungen ueber die gesch. Entwickelung d. Lehre von den Bakterien. Bd. 1, 1887.

The importance to be attributed to the microbes does not depend on their absolute number, provided only that their distribution and properties account for the features of the disease. In the experimental septicæmia of rodents the number of the blood parasites is often greater than that of the red corpuscles, while in tetanus very few bacilli are found, and those merely in the wound where they entered. But the bacilli of tetanus produce poisons of such toxicity that the amount furnished by the few bacteria present explains the whole course of the disease.

The proof that a given disease is due to a certain species of microorganisms is completed by producing in animals the same disease by means of the isolated microbes. But this is not always possible. There are diseases which occur only in man, or in one species of animals. We know the parasite of leprosy, but we cannot reproduce the lesions of leprosy in any animal yet tried. Likewise the coccus of gonorrhœa fails to grow on the mucous surface of any animal. Moreover, even when animals can be successfully inoculated the disease does not necessarily run the same course or present the same lesions in different species. The animal body is not a dead soil in which a parasitic plant, when sown, will always grow with the same vigor or give rise to the same reaction. The living system resists the parasitic invasion to an extent variable with the species. Yet even when we cannot reproduce the disease experimentally for want of suitable subjects, the demonstration that a definite parasite occurs invariably and in characteristic distribution in a given disease cannot be interpreted otherwise, in the light of our present knowledge, than that the microbe is the cause of that disease.

An indispensible basis for any intelligent interpretation of the facts known about bacterial infection is the doctrine of the specificity of bacterial species. Notwithstanding their minute size, different kinds of bacteria are just as separate and distinct, and as little capable of conversion into another species as are the classes and families amongst higher plants or animals. It is only by ignoring this fundamental fact that a man of the critical judgment of Lawson Tait can combat the germ theory and support his opposition by arguments that may seem of weight to the uninitated. But this is not the place to prove the specificity of bacterial species. The facts on which this doctrine rests can be found in bacteriological textbooks.

While we cannot transform one variety of microbes into another, we can, however, modify the vital vigor and the chemical activity of any one species within some limits by means of the environment. By varying the chemical character of the soil, by altering the nutrition of the bacteria, and by submitting them to different conditions of temperature, we can diminish, or, in some cases, enhance their rate of growth and their tissue change. We can thus change their virulence as parasites. According to the nature of the damaging influence, and the length of time it has acted, the bacteria have become enfeebled only temporarily, or they may degenerate into a permanent race of diminished vigor. Such changes in the virulence of parasites occur in nature as well as in the laboratory. Epidemics, for instance, of scarlet fever vary in severity and mortality from time to time, and this fact we can only refer to the variable virulence of the virus.

If we review the diseases now definitely traced to bacterial invasion, we will find satisfactory demonstration of a characteristic parasite in anthrax, tuberculosis; leprosy, relapsing fever, typhoid fever, influenza, cholera, diphtheria, erysipelas, tetanus, gonorrhœa, rhinoscleroma, actinomycosis, and various diseases peculiar to animals. We will meet with instances of different diseases, due to one and the same parasite according to its localization, in the case of the pneumococcus, the cause of pneumonia, pleurisy, peritonitis, otitis or meningitis, according to the organ which it has invaded. In other cases, diseases which are very similar, if not identical clinically, may depend on different varieties of parasites. Thus, suppuration may be caused by the yellow or the white staphylococcus, or some three or four closely allied micrococci, by the streptococcus, by at least three or four kinds of bacilli and perhaps even by other species. Pleurisy likewise may depend on the pneumococcus, any one or more of the ordinary pus microbes or on the bacillus tuberculosis. The pus microbes, on the other hand, are also responsible for the so-called surgical (and puerperal) fevers, either by circulating in the blood and becoming deposited in internal organs, or by poisoning the system by means of the chemical products which they form in the primarily infected tissues. Again, there are affections in which bacteria do not invade the tissues at all, but vegetate only in the intestinal canal, and cause the symptoms observed by generating soluble poisons. Probably most of the transitory bowel diseases belong to this class, although the evidence on this point is as yet insufficient. It is likely also, though not fully proven, that various constitutional disturbances, even those without striking intestinal manifestations, like scurvy and cystinuria, have this etiology.

There remains a large list of contagious diseases, which we can refer logically only to some living virus, but in which characteristic bacteria have, as yet, not been discovered. In at least one instance, viz., the malarial fevers, the virus now identified, does not belong to the vegetable, but to the animal kingdom. Whether further studies in other diseases will lead to the discovery of other protozoa, of the class to which the "plasmodium malariæ" belongs, cannot be foretold. In spite of much work that has been done on a virus so very accessible and convenient to experiment with as that of cowpox, its nature has not yet been revealed. It has been proven satisfactorily to be corpuscular and not dissolved, it has been known to cling to bacteria accidentally mixed with it so tenaciously as to mislead several expert bacteriologists, and yet no one has ever yet been able to identify it morphologically.

FLORENCE has long enjoyed the reputation of being exceedingly unhealthful, and of having a very defective water supply. Yet typhoid fever is not now, at least, very prevalent, as during the month of January of the present year there were but six deaths in the entire city and commune of Florence. The influenza there during the past winter was also of a very mild type.

SUCCESSFUL OPERATION ON A STRANGULATED HERNIA OF THREE DAYS' DURATION UPON A MAN, 76 YEARS OLD, HAVING PARALYSIS OF THE LEFT SIDE.

BY ROBERT ANDREW KITTO, M.D.,
OF RACINE, WIS.

Mr. Christian G., aged 76; Danish. Paralyzed on the entire left half of his body. The patient had a severe fit of sneezing, which was followed by protrusion of the gut through both rings into the scrotum. Family physician was called on the evening of the second day after the accident. He found the gut strangulated, and all efforts at reduction proved futile. Consultation was had, with the result that *nothing could be done for him in consequence of his age and infirmity.* I was asked to see the case, which was the evening of the third day following the accident, when I attempted to reduce the tumor under an anæsthetic, which proved to be impossible. Anxious relatives urged that something in the way of an operation be done to reduce his suffering. I agreed with them, and consented to operate at once. I called three assistants, and after a hurried preparation (and, by the way, there was little opportunity to enjoin antiseptic precautions, for the patient with his wife lived in one room), we were ready at 1 A.M. to operate. Ether was used, and the operation was begun.

I made an incision nine inches length, extending from just above the region of the upper border of the tumor down to two inches below the insertion of the scrotum. Each layer was carefully dissected away until the sac was reached. The sac being successfully opened and emptied of its fluid contents, it was then slit up to the constriction, which was carefully and successfully loosened with the hernia knife, there following instantaneously an escape into the abdominal cavity of the gas which had powerfully distended the gut. The gut was then attended to. Examination of the constricted portion showed decided thinning of its walls with several gangrenous patches. Replacement was out of the question in its present state.

The old man appearing to withstand the shock well, I proceeded to excise the necrosed part and unite the ends and replace. I made a circular incision, removing a piece three inches in length, the ends were hurriedly sutured together with the plain interrupted Lembert suture, and the gut returned after carefully cleansing the wound; the sac was removed, the incision was closed, and a drainage tube made of absorbing cotton rolled tightly into a rope about the size of a small lead pencil, when the necessary dressings were applied. The patient was then placed in bed, and hot applications vigorously applied to the entire body, with a $\frac{1}{6}$ gr. morphia hypodermically. Reaction set in nicely, and no untoward symptoms occurred during the following two weeks; at which time hypostatic pneumonia set in, seriously interfering with his breathing and former promising aspect. On the morning of the eighteenth day the patient reluctantly succumbed to the lung complication, which his weakening state could not withstand.

I write this case up only to show that it is never too late to operate in this deadly accident, even when other serious physical defects are present; also, that often the very aged people possess wonderful power of life. Undoubtedly had pneumonia not supervened my patient would have gone on to a complete recovery; hence the heading of my article "A Successful Operation," for I can but view this as successful. It would appear that the hemiplegia in his case did not militate against an operative procedure.

I should like to hear from the profession as regards their experience (if any) with a patient of this man's age surviving so serious an operation.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

February 10, 1892.

(*Concluded from page 300.*)

Dr. L. K. Baldwin in the chair.

G. Betton Massey, M.D., read a paper entitled

METRITIS AS AN INITIAL LESION IN PELVIC DISEASE; ITS COMPLICATIONS AND TREATMENT BY ELECTRICITY.

The attractive field recently opened to surgical gynecologists by the discovery that the ovaries and tubes may be amputated without invariably resulting in the death of the patient has caused an enormous preponderance of current medical literature to be directed toward diseases of these organs. So great has become the furor that little else is heard at our special societies but discussions on the wet specimens thus procured, which are brought in regularly in buckets by certain operators. This singular abundance of pathological material supplied by two organs out of an important group is calculated to make an onlooker who is, fortunately, free from what might be called the operative infection, inquire carefully into its reasons. Granting the peculiarly peccant nature of these organs as a justification, it may be asked why resort should invariably be had to amputation rather than to a more conservative operation. It may be that there is such a thing as a war-time in this work, when, as in military surgery in the field, parts of Nature's handiwork are hastily removed that a more thoughtful conservatism would have restored to health.

But it is not my purpose to discuss at present the debatable questions of the proper management of inflammatory conditions of the ovaries and tubes; they are merely alluded to at this time because it is my conviction that many ovaries and tubes have recently been removed when the real seat of trouble was within the uterus.[1] In examining for tender spots by the bimanual manipulation it is exceedingly difficult to differentiate between a sensitive ovary and a tender uterus, and if one's mind is so constituted that the uterus is entirely ignored, and endometritis or metritis unthought of, a mistake is readily made. One operator declared some two years ago that he did not believe three was such a thing as endometritis. Dragging upon the tender uterus, as he did daily, in his endeavor to find salpingitis, he mistook the purport of the pain excited.

In contrast to this position it may be affirmed that inflammatory conditions of the uterus are the most frequent of all the local diseases of parus women and not infrequently found in virgins. More significant still, it may be said to be either the precedent condition or the nidus of many of the most formidable diseases in this locality, such as certain displacements, catarrhal salpingitis, pyo-salpingitis, ovaritis, cancer of the cervix, fibrosis, and many other lesser troubles.

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[1] The grounds for this conviction are derived primarily from a number of cases of post-operative pain seen in private practice and at the Dispensary for Women at Fourth and Spruce Streets. Many of these cases had enlarged and tender wombs when seen by me, and had either been made worse by the operation or left in an unchanged condition.

How great, then, is the necessity for its early recognition and prompt treatment!

The classical studies of this disease found in the books are most instructive, though the pathological conditions described in the several varieties of endometritis are of but little clinical use to us, since we do not often study these cases in the dead-house, and as yet but few specimens have been presented at the societies. Whether the case is one of interstitial, follicular, or polypoid endometritis, it is, moreover, of secondary importance in face of the present apparently well-founded belief that they are all examples of that protean disease of mucous cavities—microbic invasion. The several forms of cervicitis, endo-cervicitis, endometritis, and interstitial metritis are clinically distinct and largely separable, it is true, but the fact should not be lost sight of that they are all alike microbic in origin, even subinvolution being septic or trauma-septic, and hence are all mere local variations of the same disease.

The recent developments of bacteriology teach us plainly, then, that simple endometritis—a bacterial colonization of the endometrial gland—is the primal step in these progressive conditions. Whether the morbific germ is one of the common staphylococci of pus or some other organism, it seems clear that to its conquest of the local phagocytes is due the hyperæmia, hypersecretion, and hyperplasia of the glandular substance of the endometrium, which, later, extends to other situations by either direct continuity of structure or by lymphatic absorption. The reason for the peculiar susceptibility of the uterine cavity to such invasions is easily conceived when we remember that the intra-uterine mucosa is distinctly glandular—that the endometrium is, in fact, a gland rather than a mucous membrane.

The method by which the uterine cavity becomes the culture-medium of these infections deserves some consideration. On reviewing the conditions present, particularly the ubiquity of pus-germs in the centres of population, one is disposed to ask why an infection of this region is not universal instead of the exception. The natural, healthy mucus and the temperature would seem to be an ever-present invitation. Why, then, are germs normally absent above the internal os, though so abundant below that point? The answer has never yet been given; but it can be none other than that of a body of sentinel phagocytic cells stationed in the cervical cavity to war upon morbific germs. Remove these sentinel cells, or lower their vitality, and the resistance they present is overcome by the outer hordes.

The ineffectiveness of these vital sentinels in puerperal infection is manifest. By a flank movement or brutal charge the seeds of destruction are planted well beyond the lines. An endometritis results, which is the cause rather than the effect of the subinvolution of the muscular fibres. In the nulliparous, and particularly in virgins, the method of invasion is not so clear, though we do not have to look far to find it. The prevalence of early stages of metritis—in other words, of endometritis—in perfectly pure virgins is a daily result of my inquiries. At sixteen, seventeen, and particularly between seventeen and twenty-three, in this climate, a uterine leucorrhœa is by no means uncommon in weak and delicate girls; and we do not have to adopt the harsh and generally untrue statement of Schroeder as quoted in the most recent work on this subject, Pozzi's *Gynecology*, that the germs are introduced by masturbation. The condition of the general health of these patients is the real causal factor. The germs are always in the cervix normally unless the hymen be imperforate, and they are enabled to penetrate within the uterine cavity by reason of weakness on the part of the sentinel cells. A girl whose blood is impoverished by inherited weakness, to which is added the many imperfections in our methods of fashionable education, is in but a poor condition to marshal sentinels and defences against any morbific attack. The logic of this view is sustained by the methods of many rational physicians in dealing with this condition in such cases. Let the blood-making organs once be restored to health, and the invaders, *if not too deeply entrenched*, will be driven out.

At its inception this affection is usually subacute, if we except the more virulent forms of puerperal metritis, and runs its course without material disturbances of temperature, like the analogous affections of the nasal cavity. Even after the disease has extended so far as the Fallopian tubes, with the production of muco-purulent accumulations, the temperature may still be normal. In my experience, an acute stage is lacking, the onward march of the affection being as insidious as it is gradual. Beginning as an endometritis or endocervicitis, the patient is only conscious at first of a leucorrhœa which becomes more abundant and irritating to the vagina and vulva, and should be the sign for active and intelligent interference on the part of her physician, though of late a do-nothing policy has been advocated by some. It has been said that the womb has its natural secretions, like the nose. That is, of course, true, but it should be remembered that the nasal secretion is not normally muco-purulent; as soon as pus-corpuscles habitually occur in either secretion, the existence of a diseased condition is manifestly proven.

The subsequent stages and the effects of this catarrhal endometritis are natural consequences. Accompanying the hypertrophy of the endometrium into fungoid and cryptose conditions we have a direct stimulation of the connective tissue cells of the parenchyma. Trophic changes in this situation and general fibrosis of the body of the uterus result. Coincidently, or at a later period, an extension upward along the mucous tract occurs, and salpingitis, ovaritis, or both, add their burdens to the suffering woman. I shall not recount the local symptoms of this conglomerate affection beyond the statement that at various periods in its course we find changes in the quantity and quality of the secretions, erosion of the os from irritating discharges, hypertrophy and tenderness of the cervix and corpus, combined with a reasonable movability of the uterus as a whole. With these facts you are all familiar. On the reflex symptoms some doubt has been thrown of late, but the best proof that pains down the limbs, in the abdomen, and in the back, with or without nervous prostration, are caused by this "irritable" uterus is given by the disappearance of such symptoms as a result of local treatment. The reason for the doubt lies in the lack of neurological training in many gynecologists, who have mistakenly treated such diseases as hysteria, neuralgia, lateral sclerosis, and locomotor ataxia as mere nervous manifestations of pelvic disease. I have elsewhere reported an instance of removal of the ovaries for pains that were due to an aggravated spastic condition; and the physicians that follow my service at the Spruce Street dispensary recently saw an even more ludicrous error of a well-known colleague: A woman applied for the relief of a pain in the side in the region of the floating ribs, making the statement that she had been under treatment for it at a neighboring dispensary for several years. The treatment had been directed entirely to the pelvic organs, and much pressure had been unsuccessfully brought to bear on her to consent to a removal of the ovaries. In spite of this treatment her pain was somewhat worse. In glancing at her back I was led to request that the corsets be removed, which revealed a most marked case of scoliosis, with corkscrew twist of the vertebræ. A properly fitting brace gave her complete relief from pain. Even a slight acquaintance with orthopædics would not hurt gynecologists; an elementary training in neurology is certainly essential to correct diagnoses in this specialty.

Besides errors of diagnosis it is possible that the present tendency to minimize the effect of uterine disease in causing backache and other neuroses is due to the failure to cure such conditions by removing scar-tissue from the cervix. Failing to cure these cases by cutting out this harmless reparative effort of nature and by removal of the appendages, the remainder of the woman is kept in bed for long periods of time under the theory that the rest-cure was the proper thing after all, and that rest was the most essential part of the rest-cure.

Clinical proof of the dissipation of these baneful symptoms by the use of means that combat the initial microbic affection and its nutritional and hypertrophic consequences is the best proof of their correlation.

A recent case will, I think, present this proof in a strong light. A healthy young lady fell a short distance from a hammock, striking the end of the spine. She suffered immediate pain, and two weeks later applied to an intelligent gynecologist, who treated her for retroversion, and later for inflammation of the ovaries, so far as could be ascertained from the patient. After some early relief the condition became stationary. At this time the case was seen in consultation by Dr. Baer, of this city, with a view to removal of the appendages, which was, however, not done for some reason. Sixteen months after the beginning of the disease the patient entered my private sanitarium in the following condition. Subjective symptoms: continuous, deep-seated scratching pain about an inch and a half above each ovary; a tender pain in the sacrum, and an inability to walk more than two squares without an intensification of these symptoms and great prostration. Objective symptoms: external evidences of perfect health, marred only by coldness of the extremities. Internal examination showed considerable leucorrhœa; uterus apparently small and in normal position, but when elevated on the finger in the posterior cul-de-sac extremely painful. Thinking the case one of posterior parametritis or ovaritis, she was treated by the vaginal galvanic method, in conjunction with general electricity and massage for the incipient nervous prostration that was becoming manifest. Considerable improvement resulted, but no headway was made with the peculiar pain in the ovarian regions until it was recalled that nothing had been done directly for the endometritis. The sound, now passed for the first time, showed that the apparently small uterus had a cavity exceeding three inches. An intra-uterine positive application was therefore made, of a strength of twenty milliampères, and this had the happy effect of checking the so-called ovarian pain permanently. Four subsequent applications of the same kind were made for the control of the discharge and the patient was restored to health and has remained well, now for some time.

This patient had been kept for three months on a lounge by her previous attendant, under the theory that this supposed essential of what is called the rest-cure would be of service. Shorn of its institutional control and electricity, this fashionable mode of treatment is a two-edged sword that is responsible for more than one case of chronic invalidism. Used with such essentials, including direct electrical applications to the uterus in the class under consideration, these cases in the borderland between the domains of gynecology and neurology may be permanently restored to health, though he who essays but one part of the treatment will meet with frequent failure and disappointment.

For therapeutic purposes cases of chronic metritis are divisible into two classes, that much resemble the divisions made by the late George M. Beard in cases of sexual neurasthenia in the male. In the one class the affection occurs as a purely local disease, the nervous organization of the individual being so robust that it fails to become affected by the local disturbance; in the other class, a far less degree of local trouble may be found associated with profound depression and disorder of the nervous system—a disorder that seems greatly disproportioned to the local disease.

The treatment of the first class of cases is naturally entirely local, and may generally be carried out in the office, when the disease has not yet ascended to the tubes and ovaries. Various modes of treatment have been efficaciously employed, though many are now abandoned as either ineffective or dangerous. I shall limit my remarks to the local use of electricity, first prominently brought forward by Apostoli, whose conclusions have been more than confirmed by my own experience. As in other subacute microbic affections of the glandular membranes, the galvanic current presents a typical alterative action which may be brought to bear directly upon the diseased surface, and by means of applicators that are in themselves innocuous because elastic, easily inserted, and lacking the dangerous piston action of the cotton swab. The contrast with acids or other cauterants that must be inserted by force is very great; no hooking or pulling on the cervix, or other harsh methods, are necessary, and the local action is, moreover, strictly measurable and controllable. By reason of its greater antiseptic effect the positive pole is usually preferable, though in the later stages of the disease, when the endometritis has eventuated in a hyperplasia, the galvanic alternative method is better than the use of a single active pole. In subinvolution, particularly, the alternative galvanic method within the uterus is quickly curative, accompanied at each treatment by a primary faradic application.

Judging from results, the local electrical treatment seems to act in a threefold manner, each special element of the method varying in usefulness in different cases. One part of the action is a local alterative effect on the endometrium; another results in a quickened absorption of hyperplastic tissue, and still another in stimulation of the muscular fibres to immediate contraction and increased tone. The first action is most important in fungous and hæmorrhagic cases; hence, the positive pole should be used alone, with a duration of some minutes at each application. As the possibility of causing an immediate increase of muscular tone in the uterus increases, the alternative method becomes more valuable; and in recent subinvolution the faradic current alone is usually sufficient.

If, at the initial examination of a case, a reasonable doubt is present as to the preponderance at that time of the original metritic trouble or of a secondary extension into the tubes and ovaries, the intra-uterine method should be preceded by a more or less prolonged vagino-abdominal galvanic treatment; and in these cases, as well as in the second class here described, in which the nervous system is affected, the value of institutional treatment is enormous. By a combination of internal and external electrical treatment, massage, diet and partial rest, these cases can be almost invariably restored to health, unless pus-cavities have formed—an event that is much rarer than some would have us believe. It may take weeks to accomplish these results, it is true; but it is also true that it takes years for the patient to recover health after the performance of a castrating operation.

212 South Fifteenth St.

Discussion.

Dr. John C. DaCosta: I think that cases of pure acute endometritis are rarely seen. The cases that I generally meet with are chronic cases, in which there is metritis in combination with endometritis and hyperplasia of the uterus. The treatment of acute endometritis should be as different from that of the chronic cases as that between an acute inflammation of the eye or legs and a chronic inflammation of them. In the acute as well as the chronic form injections are of much value. The reason that injections often do not benefit is that they are not properly given; they should be given with the woman in the recumbent position, in such a way that the water will reach the neck of the womb and distend the vagina, opening out the folds in the anterior walls, and washing away the poisonous discharge. In order to do this, the patient should be instructed to keep the vulva closed with the fingers of the left hand until the vagina is filled and distended, and then allow the water to escape. This process can be repeated as often as necessary. In chronic cases nothing will do more good than a good, free bleeding. Three to five ounces of blood should be taken, and the woman will often get up off the table with all the pain gone. Another good plan of treatment is by the thermo-cautery burning a hole one-quarter of an inch deep into the cervix. Ten days after such an application the uterus will look entirely different. Dr. Baldy's method of treatment by dilatation and curetting in these chronic cases is one I have used for years, and is of value; for these uteri often have diseased membrane and fungous granulations, keeping up a continual irritation, which the scraping will relieve by removing a cause of irritation and setting up an acute inflammation instead of the chronic one. I should rather hesitate to follow Dr. Baldy's plan of injecting tincture of iodine in the uterus. I think a safer way is to take a piece of cotton in the dressing forceps and swab the whole surface with the preparation of iodine. If you use such a preparation as I do, twice as strong as Churchill's tincture of iodine, you will find that there is very little hæmorrhage. The preparation which I use is one part of iodine, two parts of iodide of potassium, and four parts of glycerin. This will cause a decided contraction of the uterus; if it does not, give ergot in doses of a teaspoonful every hour until the bleeding stops. I do not like the idea of tamponing the uterus. I do not think that it is necessary; it is better to stop the bleeding before the patient is left.

Dr. Charles P. Noble: Dr. Baldy's paper discusses a very important subject, and one upon which every practitioner of experience has decided views. Concerning numerous special statements in the paper, there is a general concurrence among gynecologists; but in my judgment the general teaching of the paper is not sound, and if allowed to go to the general practitioner for his guidance, I feel certain that evil results will follow.

It seems to me that Dr. Baldy has gone back ten years to the point where gynecology was when I was a student; and not only are we led backward, but are given no good reason therefor. A word with reference to pathology: A mere discharge from the uterus does not indicate endometritis. We are indebted to Dr. Emmet and others for disproving the idea that every uterine discharge indicated endometritis. This may come from various constitutional derangements, such as a feeble heart, general debility, phthisis, constipation, or a sluggish portal circulation, and if these are remedied the discharge will disappear. This class of cases must be eliminated strictly when discussing endometritis. Some even go so far as to deny that there is such a disease as endometritis. I have not studied the endometrium microscopically; but clinically I believe that there is endometritis. Another important point in the study of endometritis from the therapeutic standpoint is whether the disease is or is not complicated. Treatment which is beneficent in uncomplicated endometritis may be and is dangerous where complications exist. Endometritis is often the forerunner of salpingitis, which is the forerunner of peritonitis. Old chronic peritonitis cases generally have endometritis. We also know that cases of uterine fibroid often have endometritis. It is apparent that the treatment of such cases should be essentially different from the treatment of uncomplicated endometritis. Where the endometritis is uncomplicated, I think that treatment directed to the uterus is moderately safe, although even here we may produce complications from intra-uterine applications, and especially from intra-uterine injections. The experience of our predecessors has proved this, and has shown that most cases of endometritis can be cured without treating the endometrium directly. I have supposed that we had heard the last of intra-uterine injections. In the hands of our teachers the practice was found dangerous and was given up. When the cervix is dilated widely, as after curetting, the danger is probably slight; but when done in the office without such dilatation it is distinctly dangerous—how much so any old book on gynecology will prove.

I regret that the limited time allowed for debate will not permit me to discuss the subject further; but it seems to me that the points presented are very vital ones, and that they have been neglected by Dr. Baldy.

Dr. M. Price: I thank God that I am not a woman, if a woman is to be treated in this way. The question has often been asked, Why is it that we have so much pelvic trouble? I say that the paper to-night answers that question. Every sort of acid and application has been forced into the uterus. It has been burned by the hot iron. It is no wonder that we have endometritis. Why should we not have endometritis with complications extending to the other organs and to the pelvis, requiring removal of the diseased tissues? The same men that advocate this treatment admit that they have had to remove the appendages a few weeks after dilatation.

Dr. Baldy: The treatment which is so vigorously denounced referred simply to uncomplicated endometritis, not to endometritis associated with fibroid tumor or pus tubes, or any other serious pelvic or abdominal disease. I should treat these troubles as the occasion called for. Where endometritis is uncomplicated, it can be dealt with without the slightest possible bad effect. My cases are put to bed and kept there until safe from all inflammatory trouble. Intra-uterine injections can be made in one's office with impunity if done carefully. The cervical canal, in some of these cases, is so patulous that it would admit a tube twice the diameter of the nozzle of the syringe. I use the syringe almost daily, and have not seen the slightest trouble from it.

Dr. DaCosta spoke of scarifying and curetting to produce bleeding. The curette in my hands generally produces that effect. If the bleeding is moderate, I do not use ergot. When I use ergot, I give it in fair doses to produce contraction of the uterus. I select the cases which I subject to the treatment described, and I care not if I have gone back ten or twenty years if the treatment brings about the desired results safely. I am continually receiving patients on whom abdominal section has been done, in whom the uterus is large and heavy, and all the old symptoms remain. I scrape the uterus and remove a large quantity of débris from some, and in many cases this gives relief.

THE INTERNATIONAL MEDICAL CONGRESS OF 1893.—The profession in Italy is sparing no pains to make this meeting as conspicuous a success as the best of its predecessors. At a recent sitting in Rome an organizing committee was formed, with Dr. Bacelli as its President; Professor Edoardo Maragliano, of Genoa, General Secretary; the Commendatore Professor Pagliani (head of the Public Health Department of Italy), Treasurer, and the Commendatore Signor Ferrando, steward (*economo*). There were also elected by ballot the heads of the fourteen sections over which the work of the Congress is to be distributed—to wit: Anatomy, Physiology, Clinical Medicine, Gynecology and Obstetrics, General Pathology and Pathological Anatomy, Pharmacology, Surgery and Orthopœdics, Psychiatry and Neuropathology, Ophthalmology, Dermo-syphilopathy, Legal Medicine, Hygiene, Laryngology and Otology, Naval and Military Sanitation. The committee is at this moment engaged in constituting local or sub-committees for the whole kingdom, to consist of the leading practitioners of every province. All this procedure is on the lines of the Berlin committee, which will also be imitated in giving to each provincial representative a distinctive badge, to be worn during the Congress. The committee, moreover, is proceeding to the election of foreign committees with a view to secure the presence at the Congress of the leading members of the profession in all parts of the world, so as to make the gathering as truly an international one as possible, worthy of its predecessors and worthy of Rome. The time of meeting has been fixed for September, the month in which the climate of Central Italy is at its best, when in Rome there is no risk whatever from malaria, and when the profession, particularly of Northwestern Europe, can best be spared from home.—*The Lancet.*

A PRECAUTION TO BE OBSERVED IN DOUCHING THE PERITONEAL CAVITY.—Dr. Alexander Duke, in a note to the *Lancet*, says that he has noticed that water just poured into the receptacle out of a boiling kettle will, when allowed to flow from the end of a rubber tube, be found almost cold for the first ten seconds or so. This is due to abstraction of heat by the six feet or more of tubing. It is a wise precaution therefore to allow the water to flow awhile through the tube before using it in douching parts where a slight chill might be very serious, as in the abdominal cavity after laparotomy.—*Medical Record.*

Causes of the Remote Results of Phimosis.—The remote results produced by phimosis can be readily understood by studying the anatomical distribution of the nerve supply to the penis. The sympathetic nervous system, with its delicate make-up, and its peculiar susceptibility to irritations of any nature certainly finds a locality in this organ where its singular function is demonstrated: The inferior hypogastric or pelvic plexus, situated as it is by the side of the bladder and rectum, has free communications between the second, third, and fourth sacral nerves, and liberal communications with the internal pudic, a branch of the lower part of the sacral plexus. After uniting with the pudic, the two are distributed to the corpus cavernosum and spongiosum, urethra, and in fact to all parts of the organ. The knowledge of this fact is quite sufficient to explain why any pathological irritation at the periphery should be followed by a similar condition in a remote organ, if long continued, supplied by the same set of nerves. The pudic nerve, taking its origin from the sacral plexus, distributes its branches to the urethra, skin, and muscles of the penis. The sensitive nerves from the mucous surface of the end of penis interlace with the motor nerves supplying the bladder, and any irritation applied to the periphery may be followed by a muscular contraction of the bladder. This is only the reverse of the condition existing in stone in the bladder. The moment the stone comes in contact with the irritated mucous membrane of bladder when empty, it produces a contraction of its muscular layer, and the pain is felt with greatest intensity in the glans penis. It is the friction of the nerves upon the surface of glans penis which brings on the emission and erection associated with sexual intercourse or masturbation by exciting associated muscular contraction of the muscles of penis and those concerned in ejaculating the semen. In infants the inhibitory action of the brain over the spinal cord is still in abeyance, and reflex action is more uncontrollable. In these cases there is an exaggerated sensitiveness of the senso-motor centres. This condition is one favorable to the full manifestations of remote evil effects of a constant peripheral irritation.—*Kan. Med. Journal.*

The Influence of the Climacteric upon Fibro-myomata. Müller (*Archiv. f. Gynak.*) has made a careful study of this subject based upon 109 cases. He found that while in many cases the tumor evidently diminished in size after the menopause, in nine instances it was clearly proved that the neoplasm continued to grow: such an increase in size was noted in women aged fifty-six and seventy-nine respectively. He infers that it is not safe to trust too much to the curative influence of the menopause. In opening the discussion Werth took occasion to differ from Hofmeier regarding the effect of castration. The removal of the ovaries had, he believed, a direct atropic influence upon the tumor. When menstruation ceases, its vascular supply is diminished, but if the hæmorrhages continue atrophy does not take place. Tait's statements on this question were valueless. Benckiser stated that in examining a fibroid uterus removed three months after castration had been performed, he found the same atheromatous changes in the vessel walls which were so often observed after the climacteric. This was a form of obliterating endarteritis which Thoma had described as a result of extensive arrest of the capillary circulation of an organ. Veit said that he had seen large myomata increase in size in elderly women. He did not expect retrograde changes to take place in the tumor before the age of fifty or fifty-four. Progressive increase of the neoplasm after the climacteric must be due to some unusual source of blood-supply. Fritsch had found that the occurrence of both the artificial and the natural climacteric arrested the growth of the tumor. If it continued to grow, it was usually due to cystic degeneration of the neoplasm.—*Am. Jour. Med. Science.*

The Value of Bichloride of Mercury in the Treatment of Urethritis.—Brewer (*Internat. Jour. of Surg.*) reiterates his confidence in the efficacy of bichloride of mercury in the treatment of urethritis. His method was as follows: At the first visit the patient was instructed in the proper use of a syringe, and was given a large amount of a solution of bichloride of mercury, varying in strength from 1:16,000 to 1:50,000, according to the sensitiveness of his urethra and the stage of the disease. This he was instructed to use twice daily, by taking ten injections in the morning and ten at night, holding each one in the urethra one minute to imitate as nearly as possible the result of irrigation. The patient was seen three times a week. As soon as the discharge lost its purulent character, bichloride was suspended and a mild astringent was substituted, preferably bismuth suspended in water. In the fifty-five cases treated in this way, five were not benefited, after an average employment of the method for seven days. In the remaining fifty cases, the average length of time necessary to affect a change in the discharge from pus to thin watery secretion was a fraction over eight days. The discharge entirely disappeared on an average of twenty-one days. Epididymitis occurred in three of these cases and posterior urethritis was developed in two. The reporter very fairly states that these statistics are of little value from a scientific point of view, since the cessation of the discharge can by no means be considered as an index that the disease has been cured. He offers his conclusions not so much on the basis of these cases as upon a very large personal experience, and states positively that the judicious use of bichloride of mercury in cases of acute gonorrhœal urethritis is attended with better results in subduing the painful and disagreeable features of the disease than is any other agent. The recovery is more rapid and permanent, and the frequency of inflammatory complications is very greatly reduced.—*Therapeutic Gazette.*

Dietetic Value of Pineapple Juice.—Some time ago the late Dr. V. Marcano, of Venezuela, noted that pineapple juice contained a proteid digesting substance. Recently, Prof. R. H. Chittenden, assisted by Messrs. E. P. Joslin and F. S. Meara, have investigated the matter fully, and announce facts which are likely to give to the succulent pineapple a prominent place in dietetics.

Pineapple juice is an acid fluid of specific gravity of 1.043. An ordinary pineapple yields 600 to 800 cubic centimetres of it. The proteid-digesting power is quite remarkable in its intensity. Three ounces of the juice will dissolve ten or fifteen grains of dried albumen in four hours. The action takes place in acid, neutral, or even alkaline media, thus resembling trypsin more than pepsin. It acts best in neutral solutions. The pineapple juice contains also a milk-curdling ferment.—*The Medical Age.*

With the deepest regret we learn that the doors of the insane asylum have closed upon Roberts Bartholow. What an ending for such a life! To the very last, no evidence of mental alienation appeared in his lectures or his writings. The habit of a lifetime's assiduous labor carried him along in the well-worn grooves, although outside of them his malady was easily discernible. Hard work, no rest, no Sabbath, no vacation; by such means his powerful intellect carried him to the forefront of his profession; but at last outraged Nature reached her limit of endurance, and the break-down was complete.—*Medical Times and Register.*

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SATURDAY, MARCH 12, 1892.

A PERNICIOUS OSSEOUS DISEASE (LYMPHADENIA OSSIUM.)

A pernicious form of osseous disease is the subject of a Vienna clinical prelection by Professor Nothnagel, given in full in two recent numbers of the *Press and Circular*. The changes of structure discovered by autopsy, were unusual in extent, having invaded the entire skeleton and obliterated the medulla of the bones by a perversion of that force or those forces whose "elaboration should constantly proceed in the healthy hæmatic organs." The case was that of a male, aged twenty-four years, hitherto healthy, with good family history, and living in fairly hygienic surroundings. He was first a "Schwizer," or cowherd, and later a soldier in a small Tyrol barracks. His attack dates from eighteen months ago, with fever and pain in the breast and limbs, without appreciable cause. The temperature was not recorded accurately until a month before death. Sweating was profuse at the outset of the attack, and also in the later months. Intermissions in the paroxysms of pain and fever were about two weeks in duration, with excellent health, as regarded subjective symptoms, in the intervals; later, however, the attacks became more frequent and more intense, occurring in the evening and with a periodicity resembling that of tertian malarial fever. The patient became pale and emaciated. The sternum and long bones of the extremities showed deformity from thickening. There was a right-sided exudative pleurisy which increased gradually until death. The spleen was slightly increased in area. The urine exhibited no albumen or sugar, but indican was in excess. The blood revealed oligocythæmia and oligochromæmia, and under Ehrlich's coloring commingling apparatus there was reported poikilocytosis, the erythrocytes showed a marked disparity of diameters—ranging from microcytes to the normal red cell—and a few of the red corpuscles were observed to contain single nuclei; the leucocytes were not greatly changed. The blood was examined at different times for the parasites of malarial fever, but none were observed. Bacterial examinations obtained only negative response.

The autopsy was made by Professor Kundrat on November 17, or six weeks after the patient's entrance into the hospital. The condition of the bones was the most striking feature of the case. Every bone of the spine, pelvis, shoulders, the sternum, ribs, clavicles, all the long bones, the carpals and tarsals were affected. The unchanged bones were the phalanges and those of the head and face. A thick layer of osseous deposit, as if covered with a thick infiltrated periosteum, caused the exterior deformity. All the long tubular bones were expanded at their upper portion by a greyish-white infiltrated earthy matter. The interior of the long bones, and of the larger spongy bones, was occupied by the same metamorphic deposit as appeared on their exterior. In a few places the muscular insertions were infiltrated with the same substance. The marrow of the bones, with the exception of a remnant here and there, had disappeared. No bending or twisting of the bones was present as is described to occur in *osteitis deformans*. The lymphatic glands were found enlarged, in some cases twice and even thrice their normal size. During life they could be felt to be soft and large, and the post-mortem confirmed this condition; they being in no way indurated. When cut, the glandular tissue appeared congested, due to a hyperplasia of the follicular elements, but otherwise it had a normal appearance.

The pathology of the disease seems to hinge upon a deranged hæmatic process, affecting chiefly the regeneration of the red corpuscles. The leucocytes remained almost unchanged, indicating that they were derived from lymphatics and spleen and not from the marrow of the bones. The red corpuscles were greatly reduced in number and presented a wide range in regard to their diameters, thus conveying the thought that they were the imperfect product of the spleen, unaided by the better results afforded normally by the marrow of the bones. All investigators are not agreed as to the part which the bone marrow plays in the formation of the red corpuscles, but this case would appear to bring that function as far to the front as has been taught by any of them. The argument by analogy disposes us to believe that the pathology in any case which would arise from a functional or anatomical disorder of any one of several organs, physiologically working together for the same end, would overtax the others and create in them a compensating hypertrophy. Thus, when the spleen is extirpated, a compensatory activity is found by Mosler to be thrown on the medulla ossium and lymphatic glands. In this case, the medullary structure was almost obliterated, and practically inverted the splenic experiment, throwing back a compensation of function on the spleen and lymphatic glands and augmenting the volume of those organs. These changes were recognized during life and abundantly confirmed at the post-mortem table. This remarkable case is differentiated by NOTHNAGEL from acromegaly, and one or two other forms of osseous disease, and designated "lymphadenia (or lymphadenoma) ossium," due to a gradual obliteration of the medulla, "in a manner not yet demonstrated by experiment, but probably induced by a compensating force for the altered state of elaboration that should constantly proceed in the healthy hæmatic organs."

HAND DISINFECTION.

The complete disinfection of the hands preparatory to obstetric or operative work, particularly abdominal surgery, is so essential that the recent observations of DR. HOWARD A. KELLY[1] are deserving of the widest publicity.

The common pus-producing germs, especially the *staphylococcus pyogenes albus*, are found abundantly on the hands and about the nails of everybody. To remove them and render the hands perfectly aseptic is by no means easy. The most certain method, and therefore the one to be followed, seems to be the plan which DR. KELLY advocates.

Sixty-five experiments were made to test the adequacy of soap and water alone. The hands were thoroughly scrubbed with strong brown soap and hot water from ten to twenty-five minutes. In nine instances the hands were found to be aseptic, but in these nine instances the hands had been washed in bichloride of mercury solution the day before.

Immersion of the hands in solution of bichloride of mercury as strong as 1:500 was found to be insufficient to actually destroy the microörganisms. After immersion in this solution, the epidermis did not yield cultures, but if the hands were subsequently treated with a *sterile* solution of ammonium sulphide, living germs could be obtained from the epidermis. The bichloride inhibited the growth but did not kill the germs, so that when the mercury was precipitated by the ammonium sulphide, the germs immediately commenced to grow.

By similar experiments, lysol, and also peroxide of hydrogen were found to be inadequate. The method which yielded the best results, and which in fifty experiments rendered the hands aseptic in forty-four instances, was the use of potassium permanganate and oxalic acid.

This method, as described by DR. KELLY, is as follows:

"1. Scrubbing the hands, with especial attention to the nails—not more than one millimetre in length—for ten minutes, in water frequently changed, at about 104° F.

"2. Immersion of the hands in a solution of permanganate of potash, made by adding an excess of the salt to boiling distilled water, until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized, and of a healthy pink color. This decolorization is accompanied by a sense of warmth, due to chemical reaction, and a sharp stinging wherever there is any abrasion of the epidermis.

"3. Washing off the oxalic acid in warm sterilized water."

PRONUNCIATION OF THE WORD "QUININE."

A friend of ours who has been unsettled in his mental attitude about this word, in consequence of consulting the various dictionaries, has fallen into the habit of pronouncing the term differently every other time he speaks it. Others there are who resort to the subterfuge of using *quinia*, which is really a confession of incapacity in managing the difficulties of *quinine*. The *Century Dictionary* virtually dodges the word by giving three pronunciations. Apparently it gives preference to one which does not appear in *Webster's Unabridged* at all. The latter seems to insist on the full sound of "q" in both of its phonations. The late Mr. James Parton, in a biographical sketch of the Countess of Chinchon, the vice-regal dame of Peru, whose name is immortalized in connection with the powder of the bark of the tree of the realm now lost to Spain, tries to give the true derivation of the word. "The original Peruvian word," he has found in written language to be "*kina* or *quina*, which has the sound of *keena*, with accent upon the first syllable, so given both by the natives and the Spaniards. Hence there is a reason for the common English pronunciation of the name, *keneen*. New England physicians appear to prefer the straightforward method of their own language and pronounce it as though it were an English or a Latin word. The reader may take his choice, for the dictionaries sanction both." This testimony appears to settle for us the "k" sound of the initial consonant, but it would also forbid an accentuation of the final syllable. This latter usage is almost invariable with the authorities adopting the "k" initial-sound. In the *International Dictionary* of Dr. Billings, preference is given to the "q" sound, with the accent thrown upon the final syllable. Dr. Gould's *New Dictionary* authorizes the same consonantal sound with the accent on the penult. So that we have from four not very widely separated centres of lexicography at least six different pronunciations of the word,—enough surely to be bewildering to the inquisitive practitioner. The weight of evidence seems to favor the "k" initial-sound and ie accent on the final syllable.

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[1] Amer. Jour. of Obstetrics, No. 12, 1891.

DIPHTHERIA.

A few weeks ago we called attention to the diagnois of diphtheria, and to the meaning of the term, nd urged that it should be used only in a clinial sense, and to indicate the formation of a false nembrane.

Quite recently, Jules Simon,[1] in a clinical lecture ipon the diagnosis of the anginas in children, has reated this subject in a masterly way. He classifies xudative anginas as follows:

A. Pultaceous exudation.

B. Membranous exudation. { a. Diphtheritic. b. Non-diphtheritic.

The pultaceous exudate is whitish, but slightly adherent, readily removed with the end of the tongue depressor, and is rapidly broken up in a little water. The membranous exudate, on the other hand, is thicker, tougher, fibrinous, cohesive, elastic, and does not dissolve in water. As examples of the pultaceous form of exudate he mentions that found in the *beginning* of scarlatina, the exudation of thrush which has extended to the tonsils, or the pultaceous mass found in herpetic tonsillitis.

The membranous anginas are divided by Simon into the diphtheritic or non-diphtheritic, according as they are produced by the Klebs–Loeffler bacillus on the one hand, or by other microörganisms, pneumococcus or streptococcus, on the other. The distinction is purely a bacteriological one, and cannot be made clinically without the aid of the microscope, as Simon admits. As Simon says, "Trousseau, with his marvellous clinical sense, endeavored to separate the common membranous anginas from the true diphtheritic anginas, but the clinical elements of this distinction were too subtile and too deceptive. It was abandoned until bacteriology revived it."

We are still in the dark as to what microörganisms may yet be discovered, besides those already known, which are capable of producing false membranes. And of course it is not known what may be the secondary effects of such microörganisms. Furthermore, it may be asserted positively, that sufficient time has not yet elapsed to show that false membranes, other than those produced by the Klebs-Loeffler bacillus, are always benign, or if malignant, differ essentially in their effects from those produced by the latter microörganism. Even the clinical differentiation of pultaceous from membranous formations in the throat is by no means always easy or certain.

In view of these facts, we urge that the term diphtheria shall be reserved as a clinical one, and be used in the sense of false membrane, upon mucous or wound surface. It will then be an easy matter to distinguish such species as belong to this genus, in a suitable manner, such as "Loeffler diphtheria," "streptococcus diphtheria," etc., while any attempt to limit the term diphtheria to the specific form "Loeffler diphtheria" must lead to confusion, and to dangerous results.

RELIABLE DRUGS.

To the Editor of the Journal of the American Medical Association:

Will you give us your opinion, editorially, as to the value of "Tablet Triturates" and "Compressed Tablets." I, as well as many of our profession, would like to know the most reliable *forms* in which to use medicines, and I am often disappointed in the effects of pills, as they seem liable to become inert or inactive by becoming insoluble, etc., in the stomach. Maybe the two first mentioned forms of medicaments are better than pills. Yours, etc.,

W. C. Dorset, M.D.

The advances made in the way of manufacture of elegant pharmaceutical preparations, during the past very few years, have been great, and one of the manifestations of this advance is shown in the tablet and triturate preparations, in the use of which our experience has been quite favorable.

Our correspondent reflects unfavorably on manufactured pills. In the use of manufactured pills, tablets, granules and triturates, it is essential to know that the preparations have been recently made. A gelatine or sugar coated pill will in time become absolutely insoluble in the alimentary canal. Triturates and compressed tablets are not so likely to become insoluble, but it is always a prudent precaution to take, to assure one's self that all such goods are reasonably fresh, and that they are the product of a house known for its reliability. Among the things a man most earnestly wants in all cases of sickness, is a profound faith in the remedy he is dispensing.

Our fathers had fewer remedies than we have, but they often understood their physiological action better. "Broken" and full doses, weighed and measured on the blade of a jack-knife, meant a good deal of certainty of action.

Elegant pharmaceutical preparations are the outgrowth of our higher educational systems, and are a most important part of the practicing physician's armamentarium, and whether adjacent to a skilled apothecary, or ten miles from a pharmacy, the practitioner must have the best he can obtain. In fact, it is his bounden duty to his patient to have the best.

The best, an inferior, or an inert preparation, may mean recovery, prolonged illness, or death. Such, then, being the vital importance of pure drugs, it should be made a penal offense to offer for sale those which are adulterated, or even partially inert from deterioration, from age, or other cause.

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[1] La Semaine Médicale, January 13, 1892.

PRELIMINARY PROGRAMME

Of the Section of Neurology and Medical Jurisprudence, to be presented at the Detroit, 1892, meeting of the American Medical Association:

The Neurotic Sequelæ of Zymotic Diseases, David Inglis, Detroit.

Discussion on Electrical Execution, A. D. Rockwell, New York.

The Relation of Physical to Hernial Protrusion through the Abdominal Walls, Thomas H. Manley, New York.

Aphasia, Philip Zenner, Cincinnati.

Consent in Medicine and Surgery, Clark Gapen, Omaha.

Three Phases of Paramyoclonus and the Use of Phonograph in a Case, Clark Gapen, Omaha.

Moral Insanity and Insane Morality, O. Everts, College Hill.

Responsibility in Will Making, Henry A. Chaney, Detroit.

The Inebriate Diathesis, Its Causes and Nature, T. L. Wright, Bellefontaine.

Infantile Hemiplegia with Aphasia, Joseph Eichberg, Cincinnati.

Surgical Interference with Cerebral Diseases of Childhood, Frank P. Asbury, Jacksonville.

Special Localization, Archibald Church, Chicago.

Hysterical Concomitants of Organic Nervous Disease, C. H. Hughes, St. Louis.

Lateral Spinal Sclerosis and Its Treatment, W. H. Walling, Philadelphia.

Feigned Insanity, F. W. Harmon, Carthage, Ohio.

"A Healthy Brain is Necessary to a Free-will," C. G. Comegys, Cincinnati.

Heredity in Primary Degenerations of the Nervous System, Sanger Brown, Chicago.

The Law of Periodicity in Inebriety, T. D. Crothers, Hartford.

Psychiatric Demography in Chicago, Jas. G. Kiernan, Chicago.

How Shall Responsibility be Measured in Criminal Cases? A. B. Richardson, Cincinnati.

Some Recent Researches and Possible Investigations Regarding the Establishment of Personal Identity, Irving C. Rosse, Washington.

Nerve Regeneration after Suture, W. H. Howell, Ann Arbor.

Titles not announced, Landon Carter Gray, New York; Richard Dewey, Kankakee, L. Bremer, St. Louis.

Harold N. Moyer, Chairman,
434 W. Adams St., Chicago.

G. R. Trowbridge, Secretary,
Danville, Pa.

Prophylaxis of African Fever.—At Blantyre, a Scottish settlement and mission near Lake Nyasa, in Central Africa, there is published a little paper called *Mission Life and Work*. In an article referring to the ravages of malarial fevers along the common routes of travel—almost wholly by water-ways—the following statement is made: "Twelve grains of quinine with five drops of eucalyptus oil have been taken every third day during a journey lasting three weeks, from Quilimane, at the mouth of the Zambesi, up into the Lake Country; no fever developed at that time or since." The writer believes that the immunity was obtained by this combination of the *oil* of eucalyptus with quinine, taken at regular intervals. As an antimalarial combination, in districts where quinine alone does not suffice, this suggestion seems worthy of trial precisely as proposed. If any of our readers see fit to make trial of it, will they kindly notify us of their results?

University of the South.—The organization of this institution, located at Sewanee, Tenn., is similar to that of the University of Michigan. Its founders are aiming at a high standard of requirements from their students. The very existence of such a school in any locality has an elevating tendency, and in this instance bodes a better day in the new and rapidly rising South. The managers of some of the older and more largely patronized schools will do well to look to their laurels, lest they be rudely awakened to a new condition, with a demand for better service.

The Committee appointed at the last meeting of the American Medical Association to consider the best means for promoting the prosperity of the sections of the Association will hold an adjourned meeting in the Hotel Cadillæ, Detroit, Mich., June 6, at 3 P.M.

Members of the Committee are requested to notify the Chairman of their intention to be present at this meeting.

The Committee would esteem it a favor if each member of the Association would communicate in writing his or her views concerning the best measures for promoting the development of the sections. Such communications may be sent to the Chairman of the Committee. John S. Marshall, M.D., Chairman,
9 Jackson St., Chicago.

Committee on Conference of Sections.—Gentlemen who were appointed members of this committee at the last meeting of the American Medical Association, will please send their addresses to Dr. John S. Marshall, No. 9 Jackson street, Argyle Building, Chicago.

SELECTIONS.

The Report of the British Leprosy Commission is said to be approaching completion. It is understood that it will prove of a somewhat reassuring character so far as India is concerned, since at the present time the number of lepers of this dependency is under what it has been said to be, 50,000. The Commissioners are also of opinion that the disease is not of an hereditary character, and its propagation by vaccination is very rare indeed. Leprosy is, according to the report, to be regarded as a specific disease. In Norway the disease is very much on the decline, owing to the segregation and rigid rules enforced by the Government, at the instigation of the profession, and it is thought that the disease will to a certainty be stamped out in a very few years. —*Medical Press.*

As an after-effect of that pest, the influenza, comes the nervous break-down of the doctors. The heavy work and prolonged anxiety of the last three months is followed by its legitimate consequences: insomnia, neurasthenia, and general collapse of mind and body. Those that are wise do not try to take the imperatively needed rest at their homes, but go off to some quiet spot where they can sleep. On many persons mountain air has a remarkable hypnotic action. Probably those who reside in elevated places would find sea air exercise a similar influence. New Yorkers appear to experience a similar effect when they come to Philadelphia.—*Medical Times and Register.*

The International Health Association will meet in the city of Mexico, in November, 1892. The Association at present comprises the United States, Canada and Mexico, but it is hoped that the Central American Republic will also join it at the next meeting. Dr. Watson, the Secretary of the Association, while traveling in Mexico, induced the health authorities of that Republic to enter into a plan of International and Interstate notification of the outbreak of contagious and infectious diseases, such as already exists between the United States and Canada, by which every State, Province and town are immediately advised of the appearance of disease in any foreign locality, of its nature, the number of cases, and other particulars.

A New Discovery—M. F. Weyman states in the *Medical Age* that he has succeeded in showing and demonstrating the parasite causing chalazia to form in the Meibomian glands of the lids. Physicians thought for a long time it was a mere retention cyst. Pathologists soon showed it to be a granuloma. This discovery, however, added difficulty to the subject of etiology, because all admitted that long-continued irritation was necessary for the production of granulation tissue. The fungus explains all this. It is made up of a heavy mycelium, and produces abundant spores. A section placed in a few drops of a 33 per cent. solution (aqueous) of caustic potash, will soon dissolve, if gently warmed. The mycelium alone remains. The demonstration is exceedingly simple. He has given the parasite the name of fungus chalazicus.—*Medical Review.*

Leprosy in the United States of Colombia.—The Colombian Government has become alarmed at the rapid increase of leprosy in that country, and is considering the advisability of establishing a leper colony on one of the islands off its coast. In two of the States alone the number of lepers is estimated at 30,000.—*Medical Record.*

Grip Mortality.—According to the State Board of Health mortality report just issued, out of a total of 123,878 deaths in New York State during 1891, it is estimated that 10,000 were due to influenza. The death-rate for zymotic diseases was 178 per thousand, as against 169 per thousand last year. The deaths from influenza were distributed over the whole State.

The Diagnosis of Gastric Ulcer.—In the course of a recent discussion on ulcer of the stomach in one of the London medical societies, Dr. Routh said that electricity assisted in the diagnosis of gastric ulcers; if there were really an ulcer the pain would be intensified on passing the constant current through the painful spot, whereas if no ulcer existed the current would afford relief.

Salicylate of Soda in Pleuritic Exudation.—Dr. Oerl has, during the past five years, treated nine similar cases of pleuritic effusion with salicylate of soda, after other remedies, such as phenacetin, pilocarpine, etc., had failed, and, with the exception of two instances, the results were favorable. In these two the resorption was only partial. The author concludes: 1. Serous pleuritic exudations of long standing may be removed by the administration of the salicylate of soda. 2. The salicylate has in exudative pleuritis, just as in polyarthritis, an apparently specific effect. 3. The fact that, so far as experience with this remedy has gone, no new collection of fluid is observed, makes surgical interference in serous pleuritic exudation not only not imperative, but, indeed, puts operative procedures in the back-ground. —*Medizinal Zeitung.*

Creosote in Influenza.—French journals recommend five-centigram pills of creosote in rhinitis and laryngitis due to influenza. Twenty or thirty may be taken a day, as many as one hundred in six hours having been administered in a certain instance.—*The Medical Age.*

On the Treatment of Anæmia.—James F. Goodhart, M.D., F.R.C.P., in the *American Journal of Medical Sciences*, summarizes his conclusions on this subject as follows:

First, absolute rest in bed for ten days or a fortnight—three weeks is none too much for some cases—and they should not be allowed to take much exercise of any kind for the six weeks that their treatment lasts.

Secondly, they must be fed with good, wholesome food—four meals a day—beginning with milk and egg, which can be taken in the fluid state, and thus stowed away almost regardless of appetite. Good meat and vegetables can soon be added, and each meal should see some addition until a reasonable quantity is taken.

Thirdly, comes the iron, as already detailed; and

Fourthly, any mild aperient that may be necessary.

It is not my purpose to advert to the dangers that attach to the anæmic state. Whether they are few or many, it cannot be that this disease is an unimportant one, although it is so common and so generally remediable that one might well think it so. Unfortunately, it is so very common that the public have no idea of its importance as a disease, and therefore it requires some courage to send a patient to bed for a fortnight and to prescribe a Lent where physic shall replace the accustomed fasting.

But, as I am dealing with the point of curability of these cases, I should like to say that I have several times seen it stated that, in distinguishing between pernicious and this form of anæmia, the pernicious form tends to relapse; the chlorotic form, not. This has not been my experience; quite the contrary. These cases relapse after a time, and it is necessary to tell them that it will be so, and that at the first indication of pallor or breathlessness, or, it may be, amenorrhœa, they must return to their remedy for a short course of three weeks or so. It is a curious disease and has, I believe, a large nervous element in its production; but this I feel sure of, that, by its obstinacy and its tendency to relapse, it betokens a rather important constitutional vice, and that it is not a mere intercurrent affection that is treated and done with.—*The Medical Age.*

Removal of Filth at Quarantine.—Since the outbreak of typhus fever in New York, the quarantine officers in Boston have devoted especial attention to Russian Jews. Nine from the steamer "Norseman" and forty from the "Huron" were removed to the quarantine station, and were compelled to take a bath and remain until their clothes were thoroughly cleaned.

The Law of Periodical Function in Women.—Ott (*Weiner Med. Presse Archiv. f. Gynæco. l.*) reports some observations, not exclusively upon menstruation, but upon the various vital processes occurring in women during the period of generative activity. These processes correspond in time to the hæmorrhage—are associated conditions, with a dependent relation to it. Observations upon temperature, pulse, and blood pressure indicated that vital activity attained its maximum preceding the menstrual period, and declined at its commencement or immediately before. Sphygmographic tracings, muscle strength, and excretion of urea suffer similar variations. Observations were made at a certain hour each morning during prolonged periods, sometimes extending into the menstrual periods, upon heat radiation, muscle strength, pulmonary capacity, inspiratory and expiratory force, the tendon reflexes, in healthy women placed under the same condition; and a physiological functional periodicity of the female organism was demonstrated. To establish the connection between menstruation and this periodicity of function, it is necessary to determine if the rhythmical variations are independent of menstruation. A large number of observations made by Dr. Schichareff, under the guidance of Ott, upon pulse, temperature, and blood-pressure in girls between the ages of 8 and 13, and in women between the ages of 58 and 80 years showed that no such periodical variations of physiological functions occur in females during the periods in which they are not capable of conceiving, and in which they do not menstruate.—*The Canada Lancet.*

THE IMPORTANCE AND THE NECESSITY OF NATIONAL HEALTH SERVICE.—(Anniversary Address at the eighty-sixth annual meeting of the Medical Society of the State of New York, at Albany, N. Y., February 3, 1892, by A. Walter Suiter, M.D.)

After much thoughtful consideration, I have determined to invite your attention briefly to some topics relating to the public health, and to some of the existing anomalous and contradictory situations which confront us in the Governmental system under which we live.

There is no more truthful saying than the oft-repeated maxim, "Public health is public wealth;" and in all the studies connected with political economy the preservation of life must, of necessity, be an important factor. Health and wealth are reciprocal terms. Give health to a Nation, State or municipality, and wealth and general prosperity will be the natural consequence. It has been conclusively shown, by statistical observation, that human life has a distinctly calculable financial value, and the material profit to the public weal of properly observed sanitary laws may, therefore, be accurately and instructively estimated.

Sanitary science is not of recent origin, but has ever, from the earliest times, engaged the thoughtful attention of men. Hippocrates, the immortal father of medicine, five hundred years before the Christian era, gave to it its first great impulse, when besought to aid the magistrates of Athens in their sanitary regulations, during the prevalence of the great and devastating pestilences of that ancient date.

The Mosaic code of laws prescribe the most careful sanitary directions and restrictions for popular guidance. They were thus made religious observances, and were always faithfully followed by the Jewish nation, and are practiced by the people of that race to the present day. It is said that "in mediæval and modern history they have often, even down to our own times, been spared the ravages of epidemics, when their Christian neighbors were perishing around them."

History informs us that in ancient Greece there was a chief medical officer of State, who was called the ἀρχιατρὸς. This officer was selected for his superior qualifications, and he was universally regarded as a most important functionary. Great attention was paid to the subject of the public health, and as medicine was believed to be a divine art, no department of the government was more popularly respected.

Under the Roman Emperors there were regularly appointed State and municipal health authorities. They were organized into boards and divided into two classes, one of which, the Palatinate, was a part of the national government, and the other, called *archiatri populares*, was attached to the municipalities and towns. The latter were organized into colleges or councils in the various towns throughout the Empire, and they were not only required to carefully guard the public health, but to them the additional duty was assigned of supervising the courses of study in the medical schools; and no physician could legally practice the medical art until his qualifications had first been passed upon by this board of archiaters, and reported to the magistrates who granted the licenses. It thus appears that these were boards of health and boards of medical examiners combined, and that in that remote period the State properly recognized the relation of the educational qualifications of the physician to the public health.

It is interesting to note how history seems to be about to repeat itself in these modern times; but still more interesting to observe how much time and argument have been required to bring the public, and especially its law-making bodies, to a true appreciation of a public health service in its relations to the State.

During the Dark Ages very little can be found upon the pages of history relating to public sanitation, but they teem with mournful descriptions of ravaging epidemics and the powerlessness of the people to stay their devastations. Ignorance and superstition reigned supreme, and the "visitation from God" idea prevailed. The first regulation of which there is record relating to public health, in this period of history, was the enactment of a law for the prevention of infectious diseases in Venice, in A. D. 1127. This was followed, two centuries later, by the establishment of quarantine by the Venetian authorities, owing to the prevalence of the leprosy in Italy and France.

During ancient, and most of modern times, it may be said that the measures adopted for the preservation of the public health were entirely of an empirical nature, and had no scientific basis; and the science of sanitation is, really, of very recent origin, practically having its birth when the intelligent study of vital statistics, within the present century, gave to it a mathematical character, and thus began its march toward a place among the exact sciences. From this reliable beginning within the past half century wonderful progress has been made, until it may be stated that there is, at the present date, no civilized nation on the earth that has not an organized system for the protection of human life and the prevention of disease.

Preventive or State medicine has come to be a distinct department of study in England, France and Germany, and to some extent in the United States.

In England there is a College of State Medicine, and by recent enactment no medical officer of health can be appointed without he possesses a diploma in public health.

Stimulated by threatenings of a great epidemic of pestilence in 1871, the American Public Health Association, a voluntary organization composed of the most eminent sanitarians of the country, was formed. It had for its object "the advancement of sanitary science, and the promotion of organizations and measures for the practical application of public hygiene."

This body exerted a most powerful influence upon the public health legislation of the country, and especially upon the much agitated question of the establishment of a central authority; and chiefly by that influence the law of 1879, creating the National Board of Health, was passed.

That Board consisted of seven members appointed by the President from civil life, and four *ex officio* members representing the Army, Navy, Marine-Hospital Service, and the Department of Justice, and was charged with the duty of obtaining information on all matters relating to the public health, advising with the executives of the several States in relation thereto, and to have control of all matters relating to the public health, both external and internal.

Unfortunately for the country, the duties of the National Board expired by the limitation of the act in 1883, and Congress refused to grant the necessary appropriations for the continuance of its work, and thus, although the Board is still in existence, it is entirely shorn of its powers, and we are practically in this great country, which boastfully assumes to lead all others in enlightenment and civilization, without an organized central system of health administration, in which regard we are far behind the progress of the age.

One of the greatest benefits accomplished by the National Board while it had active existence, was the influence exerted toward the establishment of health systems for the States and municipalities throughout the Union. The impetus which it gave has resulted in the organization of State boards in nearly every State, all of which are doing most excellent work, and in turn are fast completing systematic and efficient municipal organization of a similar character; with the present prospect that at no distant date there will be no municipality or township without its local sanitary board.

No true and patriotic American citizen would permit himself to rest contentedly under the imputation that his National Government, founded upon the unalterable principle of equal and exact justice to all its people as to "life, liberty, and the pursuit of happiness," is not the greatest, the grandest and most promising among all the civilized nations of the earth. By its wise and beneficent laws, its social system, its material progress and power, its wonderful resources, its charitable institutions and public schools, it deserves and commands the admiration of the world; and yet is easy to demonstrate that in respect of that most important and highest function of a State—the protection of the lives and health of its inhabitants—our Government to-day, when compared with other enlightened nations, occupies a position singularly inconsistent and anomalous, and contradictory, quite, of the eternal and immortal principles to which it owes its birth.

Having directed attention to the meagre and unsatisfactory condition of public health legislation from the establishment of this Government, it now becomes pertinent to inquire, Should there be a national public health service in the United States, and what should be its character and scope?

All the experience of nations and, indeed, that of this country during a brief period, proves the affirmative of the first proposition. Enlightened public opinion, public safety, popular education, and the combined interests of the great commercial communities, demand it.

The advancement of medical science, the stimulation of original and experimental research into the ultimate causes of disease, and the means of prevention and cure, require the powerful aid of the national resources for their development.

There has been and is a mistaken idea that a national health system has no further province than the establishment of quarantine regulations as a defense against *foreign* pestilences, and that such a service is needed only when threatenings of such calamities are apparent. There can be no greater misconception of the true scope and purpose of a central health department in a government than this.

While it is by no means proper to depreciate the desirability of an effective quarantine, or to belittle its importance, it must be remembered that much more is needed to protect the health of a nation than methods designed only for the purpose of warding off the few foreign diseases which exceptionally visit our shores.

Cholera and yellow fever are indeed to be dreaded, but can it be said that they are more formidable or important causes of death than many of the infectious diseases which are indigenous to our soil?

Let the statistical records of diphtheria, typhoid and scarlet fevers, and last—and greatest—consumption, furnish the answer.

The scope of a national health department should be, in great part, educational in character, and the regulation of the external quarantine stations, which is now safely intrusted to a subordinate but efficient bureau of the Treasury Department, should be but a tributary division of the general system.

This system, then, should comprehend far more than the mere adoption of means and methods for the prevention and subduing of possible pestilential visitations. It should be an organization "with every needed scientific appointment" for the elucidation of all the intricate problems connected with the care and protection of health and life within our borders, whether dependent upon causes foreign or domestic, "and fully capable of tracing out all the hidden sources of disease, whether confined to the air, the soil, the water or the food; in the dwelling, the workshop or the manufactory; in the public school or the place of resort. Everything which affects the development, growth, maintenance and long life of the individuals or classes of a community, falls legitimately within the scope of its inquiry."

It has been said that "ignorance of the laws of health has conscripted more people for the grave than all the battlefields of the world," and that "the great plagues which swept over Europe during the Middle Ages caused more deaths than all the wars of a century." Hence the greatest function of the State would seem to be to provide the means for the education of its wards, the people, to the proper observance of the laws of sanitation, without the scientific application of which untold suffering, direful disaster and premature death must be the inevitable consequence.

A central or governmental health system such as I have indicated and would propose should not, then, merely include the search for the means to ward off and combat threatened pestilence. It should also comprehend the thorough investigation into the causes, both remote and immediate, of the pestilence itself; and such researches should not be allowed to depend, as is now the case, upon the private sacrifices of the personal comforts and opportunities of the noble devotees of science, to whom the constant demands of the *res angusta domi* are ever present, and whose only hope of reward is the consciousness of having contributed toward the alleviation of human distress, and the possibility of an immortal fame. It should include within its scope the fostering of prolonged and exhaustive experimental researches into the ultimate principles of all the great and hidden physiological and pathological questions of our time. It should further include the investigation of all that relates to the causation of the many infectious diseases which may be considered native to this country.

It is a notorious and much to be deplored fact that experience proves that our National Government, through its appointed representatives, has always paid far less attention to the value of *human* health and life than to that even of plants and animals, and I have been much impressed with the inconsistency of its position in this respect.

The National Government has never yet lent the aid of its immense resources toward the endowment of any continued or uninterrupted effort in the line of experimental research in any department of science in which the preservation of the health and life of its citizens are concerned. It has persistently refused to grant adequate funds to the branches of service which have been established, even when impendimum preceding the menstrual period, and declined at its commencement or immediately before. Sphygmographic tracings, muscle strength, and excretion of urea suffer similar variations. Observations were made at a certain hour each morning during prolonged periods, sometimes extending into the menstrual periods, upon heat radiation, muscle strength, pulmonary capacity, inspiratory and expiratory force, the tendon reflexes, in healthy women placed under the same condition; and a physiological functional periodicity of the female organism was demonstrated. To establish the connection between menstruation and this periodicity of function, it is necessary to determine if the rhythmical variations are independent of menstruation. A large number of observations made by Dr. Schichareff, under the guidance of Ott, upon pulse, temperature, and blood-pressure in girls between the ages of 8 and 13, and in women between the ages of 58 and 80 years showed that no such periodical variations of physiological functions occur in females during the periods in which they are not capable of conceiving, and in which they do not menstruate.—*The Canada Lancet.*

The Importance and the Necessity of National Health Service.—(Anniversary Address at the eighty-sixth annual meeting of the Medical Society of the State of New York, at Albany, N. Y., February 3, 1892, by A. Walter Suiter, M.D.)

After much thoughtful consideration, I have determined to invite your attention briefly to some topics relating to the public health, and to some of the existing anomalous and contradictory situations which confront us in the Governmental system under which we live.

There is no more truthful saying than the oft-repeated maxim, "Public health is public wealth;" and in all the studies connected with political economy the preservation of life must, of necessity, be an important factor. Health and wealth are reciprocal terms. Give health to a Nation, State or municipality, and wealth and general prosperity will be the natural consequence. It has been conclusively shown, by statistical observation, that human life has a distinctly calculable financial value, and the material profit to the public weal of properly observed sanitary laws may, therefore, be accurately and instructively estimated.

Sanitary science is not of recent origin, but has ever, from the earliest times, engaged the thoughtful attention of men. Hippocrates, the immortal father of medicine, five hundred years before the Christian era, gave to it its first great impulse, when besought to aid the magistrates of Athens in their sanitary regulations, during the prevalence of the great and devastating pestilences of that ancient date.

The Mosaic code of laws prescribe the most careful sanitary directions and restrictions for popular guidance. They were thus made religious observances, and were always faithfully followed by the Jewish nation, and are practiced by the people of that race to the present day. It is said that "in mediæval and modern history they have often, even down to our own times, been spared the ravages of epidemics, when their Christian neighbors were perishing around them."

History informs us that in ancient Greece there was a chief medical officer of State, who was called the ἀρχιατρὸς. This officer was selected for his superior qualifications, and he was universally regarded as a most important functionary. Great attention was paid to the subject of the public health, and as medicine was believed to be a divine art, no department of the government was more popularly respected.

Under the Roman Emperors there were regularly appointed State and municipal health authorities. They were organized into boards and divided into two classes, one of which, the Palatinate, was a part of the national government, and the other, called *archiatri populares*, was attached to the municipalities and towns. The latter were organized into colleges or councils in the various towns throughout the Empire, and they were not only required to carefully guard the public health, but to them the additional duty was assigned of supervising the courses of study in the medical schools; and no physician could legally practice the medical art until his qualifications had first been passed upon by this board of archiaters, and reported to the magistrates who granted the licenses. It thus appears that these were boards of health and boards of medical examiners combined, and that in that remote period the State properly recognized the relation of the educational qualifications of the physician to the public health.

It is interesting to note how history seems to be about to repeat itself in these modern times; but still more interesting to observe how much time and argument have been required to bring the public, and especially its law-making bodies, to a true appreciation of a public health service in its relations to the State.

During the Dark Ages very little can be found upon the pages of history relating to public sanitation, but they teem with mournful descriptions of ravaging epidemics and the powerlessness of the people to stay their devastations. Ignorance and superstition reigned supreme, and the "visitation from God" idea prevailed. The first regulation of which there is record relating to public health, in this period of history, was the enactment of a law for the prevention of infectious diseases in Venice, in A.D. 1127. This was followed, two centuries later, by the establishment of quarantine by the Venetian authorities, owing to the prevalence of the leprosy in Italy and France.

During ancient, and most of modern times, it may be said that the measures adopted for the preservation of the public health were entirely of an empirical nature, and had no scientific basis; and the science of sanitation is, really, of very recent origin, practically having its birth when the intelligent study of vital statistics, within the present century, gave to it a mathematical character, and thus began its march toward a place among the exact sciences. From this reliable beginning within the past half century wonderful progress has been made, until it may be stated that there is, at the present date, no civilized nation on the earth that has not an organized system for the protection of human life and the prevention of disease.

Preventive or State medicine has come to be a distinct department of study in England, France and Germany, and to some extent in the United States.

In England there is a College of State Medicine, and by recent enactment no medical officer of health can be appointed without he possesses a diploma in public health.

Stimulated by threatenings of a great epidemic of pestilence in 1871, the American Public Health Association, a voluntary organization composed of the most eminent sanitarians of the country, was formed. It had for its object "the advancement of sanitary science, and the promotion of organizations and measures for the practical application of public hygiene."

This body exerted a most powerful influence upon the public health legislation of the country, and especially upon the much agitated question of the establishment of a central authority; and chiefly by that influence the law of 1879, creating the National Board of Health, was passed.

That Board consisted of seven members appointed by the President from civil life, and four *ex officio* members representing the Army, Navy, Marine-Hospital Service, and the Department of Justice, and was charged with the duty of obtaining information on all matters relating to the public health, advising with the executives of the several States in relation thereto, and to have control of all matters relating to the public health, both external and internal.

Unfortunately for the country, the duties of the National Board expired by the limitation of the act in 1883, and Congress refused to grant the necessary appropriations for the continuance of its work, and thus, although the Board is still in existence, it is entirely shorn of its powers, and we are practically in this great country, which boastfully assumes to lead all others in enlightenment and civilization, without an organized central system of health administration, in which regard we are far behind the progress of the age.

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The National Government has never yet lent the aid of its immense resources toward the endowment of any continued or uninterrupted effort in the line of experimental research in any department of science in which the preservation of the health and life of its citizens are concerned. It has persistently refused to grant adequate funds to the branches of service which have been established, even when impending calamities have made the need of protection imperative.

The National Board of Health and the Marine Hospital Service, both of which I have mentioned, and both of which are so organized that, with proper and adequate appropriations they might institute investigations into the nature and causes of the diseases which afflict the human race, that would result in incalculable benefits to mankind, have always been hampered by lack of sufficient funds to properly discharge the duties for which they were designed.

In this connection let me quote from a recent report of the Marine Hospital Service. In speaking of the investigation of the nature of yellow fever undertaken by the department, and insufficiently patronized by the Government, a distinguished officer says: "It will be acknowledged that our means of combating this disease, whether as hygienists or therapeutists, are very unsatisfactory. . . . It is a matter of very serious importance, and should receive for its solution very liberal aid from the Government of the United States.

"The disease may strike at any time on our shores with a deadlier hand than foreign foe. Patriotism grows exultant over political platforms wherein are mentioned the means of defence against an armed invasion, but not a voice is raised for public health; and yet that flag for which millions are voted to uphold its honor with gunpowder will be found flying at half-mast over the vessel that brings pestilence to our shores. Costly public buildings are erected, expeditions are sent to the north pole, but the Government has been slow to make appropriations for the establishment of necessary quarantine stations, and has never yet made any sustained effort toward investigating this or any other disease."

With reference to the National Board of Health, a most ridiculous situation presents itself. It has had a constitutional existence for a decade, but was emasculated and deprived of its power after three years of most excellent work, which gave to the cause of sanitary science the greatest impulse it has received in this country for a century, by the refusal of congress to appropriate the necessary funds for its continuance. During the time it was sustained it had a most vigorous existence, and demonstrated in an emphatic manner by its accomplished results the value and importance of a public health service to the people of the United States; it employed experts and instituted investigations into a great variety of scientific subjects pertaining to public sanitation; it sent commissions abroad to study the causes and means of prevention of the foreign infectious diseases; it began a most comprehensive investigation into the subject of the relation of soils to sanitation; it assisted and encouraged the organization of State and local boards of health throughout the country; and, it is stated, more than thirty subjects relating to sanitary science of national importance, which could not be properly studied except by Government aid, were especially investigated and reported upon by this board during the time the funds were supplied.

It brought into concert of action all the State and municipal health authorities, and by this method succeeded in suppressing the greatest epidemic of yellow fever that ever visited our shores; it established a systematic steamboat and railroad inspection; organized refuge stations upon isolated islands for infected vessels to be properly fumigated; edited and published a weekly journal, which was generally distributed and contained complete reports relating to the sanitary condition of all countries with which we have commercial intercourse.

The law which incorporated this board made it a most representative organization, and it is doubtful if any other method which can be proposed will ever serve the public interest to better advantage.

Seven of its members were selected from the most eminent sanitarians of civil life, and three to represent the hygienic branch of the Army, Navy, and Marine Hospital Service, and one to represent the Department of Justice. And yet it was possible, under our sometimes curious political methods, for a junto of legislators, ignorant of the scientific purposes of the organization, by a few specious and even silly arguments, to inhibit and bring to a disastrous close all the benevolent undertakings which it had so auspiciously inaugurated. False ideas of economy were allowed to prevail, appropriations were denied, and nothing now remains of that once vigorous public service but its name, its fame, and its dignified constitutional organization.

I call attention to these facts more especially to show how forceful is the argument which calls for the establishment of a health department in this Government, and how abundant is the testimony that, with proper and adequate encouragement given to it by public endowment, we could without doubt lead all the nations of the civilized world in the inauguration of researches and reforms of the utmost value to the comfort and happiness of mankind.

It is a most humiliating fact that in all these respects, owing to the shameful neglect of our law-making bodies, we are placed in a position far behind that of all the other enlighted nations of the world, when our institutions, abundant natural resources, and substantial advancement in all that pertains to progress in civilization unitedly demand that we should *lead* rather than follow.

Why should Germany, France, and England be permitted to claim a monopoly of all the wonderful discoveries of the present age? Have their scientists greater inventive genius or brighter intellect than those of our country? Must we concede that in the governmental system of those countries there is greater or more paternal regard for the lives and welfare of their citizens?

There is an easy way to solve these problems, and it is largely to differences in the political systems that we must look for the explanation sought. A *popular* government has its advantages, but there are advantages to science in the unlimited prerogatives of an autocratic monarch which seem to be impossible under democratic or representative governmental methods.

How quickly did the German Emperor recognize the immense advantage to his country and his reign of the great possibilities connected with the studies of Koch, and how ready was he to furnish the means from the National Treasury, independently of politics or election, to encourage him in his efforts!

The endowment of research in science by governmental patronage is a fruitful theme, and it very naturally finds a place within the scope of the purpose of my remarks; but when we consider the history of other nations in this regard, the desire to draw comparisons is irresistible.

Let me call your attention to some facts in this connection which may serve to emphasize our relative situation, and, I trust, may point the way for reform, which would place us in the line of that swelling tide of progress characteristic of our times.

The very highest honors are conferred upon individuals in Germany, France, England, and many other countries by the government for distinction in original research. Titles and decorations are granted them, and they are not only endowed with opportunities, financial and otherwise, to urge them on, but they are granted livings and pensions galore. For example, Cuvier by France, Berzelius by Sweden, Liebig by Germany, Jenner by England, were ennobled, public grants were awarded them, and public statues were erected in their honor and to their memory. Koch and Pasteur, of our own time, have been made the recipients of honors, titles and material assistance in the line of hospitals for their experimental use, and laboratory privileges and facilities far beyond the dreams of the patient plodder and self-denying investigator in republican America. Here, with the wealth-worship and restrictive parsimony of our legislators, no inducement is offered the student whose tastes and natural qualifications lead him to devote his life and talents to original research; and unless he be possessed of a competency, he has no alternative but to turn his attention from his cherished object and devote his best energies to the practical necessities of life, biding his time and chance for the opportunity to do otherwise.

The world-renowned and immortal Agassiz conferred upon the United States the great prestige of his name and undying fame for what return? The paltry privilege of free transportation to the fields of his investigation upon Government vessels, while his wonderful labors and achievements for science were fostered and subsidized by the munificence of private individuals!

The English Government maintains a most excellent and systematic public health service. It annually grants funds for scientific researches to the Royal Society and to individuals for special studies in matters relating to sanitation; commissions composed of the most reputable scientists are sent abroad from time to time, to make special investigations of various diseases and subjects for the benefit of the public health. These commissions are maintained and subsidized almost without stint as to time or money. There is each year voted by the government large sums for what are called "Auxiliary Scientific Investigations," which are instituted on the recommendation of the local Government Board and the Medical Officer of the Privy Council. These sums are paid to skilled investigators and for the establishment and equipment of laboratories—physical, chemical and biological. Great inducements and much encouragement are offered by special government endowment to individuals and societies to stimulate progress in original research. There is a commission at present in India under the patronage of the English Government with unlimited facilities, charged with the duty of searching out and establishing the true etiology and pathology of leprosy; and another, with similar privileges, organized for the same duty with reference to rabies; and many other researches have been organized in times past for such objects almost without restriction as to time, apparatus, or money.

Contrast with this the lamentable experience of one of our own illustrious investigators, of whose fame every American is proud, and who is by no means unknown to this Society. Several years ago the necessities of the hour made it seem imperative to our Government to inquire into the etiology of yellow-fever, and Dr. George M. Sternberg, U. S. Army, was commissioned to visit Havana for the purpose. He had scarcely arranged his equipment and appliances when, in the midst of some of his observations, which promised the greatest results, he was ordered to return, as the insufficient appropriation was exhausted. He once made a trip to Mexico and Brazil for the same purpose with like results. It has been wisely said: "It is not in this manner that the patient and self-sacrificing labors, devoted to this end for many years by this distinguished scientist, are to be utilized."

Germany enjoys the distinction of having given the greatest impulse to etiological and pathological research of any civilized nation in recent years. Why? Simply because that enlightened government recognizes the vital importance to its people of sanitary investigation; and we are indebted to it and its great Imperial Board of Health for much of the astonishing progress of our time in bacteriological science and many life-saving and disease-preventing methods. Its greatest scientist, Robert Koch, by his immortal discoveries, signalized the beginning of a scientific warfare upon the two greatest scourges of the human race, which will never cease until they perish from the earth—tubercular consumption and Asiatic cholera.

Think of the possibility suggested, by the now undisputed establishment of the pathogenesis, of the ultimate extermination of that fell destroyer—tubercular consumption—which in the United States alone fills one hundred thousand graves each year!

Chimerical thought, say you? Utopianism?

No, by all means, no! The time will come, and all signs are propitious that many who hear me now will live to note the truth of my prediction, when the final extinction of this dreadful disease will be accomplished; and, shorn of its death-dealing power, it will take its place with the small-pox of to-day, which has practically "met its Waterloo."

Ladies and gentlemen, it is my belief that we are well advanced within the borderland of an era of progress upon these lines where wonders will be unceasing, and where the results obtained will not be by empirical methods, as at first characterized Jenner's immortal discovery, but "guided by the pure and certain light of science;" each victory won will be suggestive of another and a greater one beyond.

The patient and industrious Koch proposes that the struggle, "in this field of labor," against these "foes of the human race," shall be made the subject of an international contest for supremacy.

How worthy would be the object!

How beneficent the accomplishments!

How noble the ambition!

And in this vast enterprise where shall our beloved country be found?

Shall we remain in "Darkest Africa" or shall we seize the opportunity to grasp the victor's crown?

I dwell to some extent upon the institutions of the German Empire, because in many respects it, in my judgment, furnishes a model. The resources of her splendidly organized Imperial Board of Health are practically without limit, and the premiums which she provides for excellence in research are such as to gratify the most aspiring of her students. Her universities and all educational institutions are directly under governmental control and patronage; all teachers are government officers, with salaries and pensions; honors and titles are among the prizes offered and frequently awarded to the votaries of science, and no opportunity is neglected to demonstrate the national appreciation of merit and achievement, especially where the public benefit is concerned. In each of the leading universities the Imperial Government has established a hygienic institute, thoroughly equipped with lecture-rooms, special chemical, physical and bacteriological laboratories.

Nothing could be more satisfactory to the student of science than the encouragement offered and material assistance provided to stimulate and foster progress in original research in biology, physiology, pathology and the allied sciences by the Government of France. True to her history, both ancient and modern, in this regard, she still maintains, like Germany, a Department of Public Instruction, under which ministry the national patronage of her universities, colleges, institutes, academies and learned societies furnishes the widest and most alluring opportunities for profound and extended studies to her distinguished savants. Recognizing with characteristic aptitude the vast importance to the public welfare of the elucidation of the theories connected with studies in science, and their application to the popular interests, the people of the French nation, through their governmental authorities, have ever stood ready to provide the means which place the patient investigator at once far above the necessity of personal effort in this direction. The world-wide renown of Louis Pasteur, the father of bacteriology, is chiefly the result of this system; honors, prizes and pensions have been awarded him for his achievements in the study of fermentation, and it was easy for him to convince the authorities of the importance of his inoculation theory for the cure of hydrophobia. A fully equipped institute was immediately placed at his disposal, and an abundant appropriation provided for the investigation and elucidation of the subject from a scientific standpoint.

What, think you, would be the result if one of our own scientists should make to the Government of the United States a similar application for a similar purpose? Experience teaches that it is more than probable that he would meet the same reception that was accorded to the immortal Morse, when he exhibited the then curious machine to the Congressional Committee, and modestly asked for the pittance which was to inaugurate the development of the electric telegraph, the most stupendous scientific discovery since the beginning of the world. His instrument and himself were characterized as "cranks," and it is said that we are indebted to that circumstance for the origin of the colloquial use of that euphonious and now expressive term.

The French Government has recently established and subsidized a Pasteur institute in Constantinople, for the purpose of bacteriological and etiological study, and stimulated by this circumstance, the Sultan of Turkey has been aroused to the importance to the public weal of revolutionizing the study of medicine and public sanitation, and has established a medical faculty in accordance with the system of the more enlightened nations; he has also granted government patronage and supervision to public hospitals throughout his empire. His majesty has sent to foreign countries many distinguished students to study the most modern methods of scientific research, and has invited from France eminent physicians to perfect the organization of medical schools and hospitals. This is a very noteworthy circumstance, as a medical college has hitherto been unknown in Turkey. It also serves to emphasize the argument in favor of the endowment of scientific efforts by the State.

The recent history of far-away and so recently unenlightened Japan furnishes also a good example. Her parliamentary government, in the establishment of which the influence of the United States Government has been the greatest, has but reached its twenty-sixth year; and yet, in respect to the care of the public health and the endowment of scientific research, the "pupil has far outstripped the master;" a national board of health has been established, and is operating under the most advanced methods. She also constantly patronizes the distinguished students of the Empire, and maintains her medical schools and hospitals.

All the universities of the Empire of Russia are government institutions, the professors being government officers holding rank and titles: classes of young physicians are sent abroad to study the various branches of medicine under renowned teachers; endowments and facilities are publicly furnished to members of the medical societies of the country for scientific research.

Even disturbed and vacillating Mexico has a national health system, and maintains an attitude of patronage and control of her medical institutions and hospitals.

Numerous other comparisons of a similar nature might be cited in this connection, but I forbear, lest I weary you with detail. The inference to be drawn from such premises points, with irresistible force, to an amazing public indifference, and demonstrates with the greatest emphasis the culpable negligence of the people of this great and enterprising country to the pre-eminently practical subject of the necessity for an organized effort for the preservation of life and the prevention of disease, the constant agitation of which should never cease until our rightful and logical position among the enlightened nations of the world is firmly and enduringly established.

I trust sincerely that by these references the impression has not been created that I take a pessimistic view of my country's institutions. I yield to no one in my admiration and love of American methods and customs; it is that very admiration and love and a hopeful desire to see a shameful inconsistency corrected which inspires me to speak these words.

And here the question arises, Does our National Government do nothing to foster science and scientific enterprises? Yes; it maintains a Scientific Agricultural Department, and so abundantly provides for it, that it has reached a position in recent years where it can successfully vie with any similar department in any land.

Does this department now deserve the opprobrium which, sometime, was cast upon it, of existing only for the purpose of distributing garden seeds?

I venture to say that if any argument is needed to demonstrate the importance and feasibility of a National Department of Health, it could readily be found in the history of the wonderful progress made in the Science of Agriculture and the diversified interests connected with it in the brief period since it was elevated to the dignity of an executive department. Aided by appropriations lavishly bestowed by Congress, its scope and powers have been enlarged to such an extent, that it has already attained to a sphere of usefulness and accomplished results which justify the pride and appreciation of every American citizen. Within its scope are included a great variety of divisional departments, having for their objects the technical observation and study of subjects relating to the care and protection of the health and lives of plants and domestic animals.

Among these numerous divisions—too numerous to allow of even mention here—there is maintained and endowed with most adequate appropriations by Congress a Bureau of Animal Industry, wherein a systemized scientific study of animal pathology is pursued, comprehending the necessary investigations pertaining to the prevention and treatment of all the diseases to which the domestic animals of the country are subject. Renowned expert pathologists, microscopists, and veterinarians are employed and comfortably salaried, and laboratories and appliances are provided for the prosecution of this work, the success of which has been so great that, according to the latest report of the Secretary of Agriculture (to which I am indebted for many of these facts), the almost total eradication of the contagious diseases of animals has been accomplished.

Even greater things are done under Government patronage in the field of vegetable pathology, as witness the following quotation from the report just mentioned: "During the past year, as heretofore, the Division of Vegetable Pathology has devoted special attention to field work, having in view the prevention of plant diseases."

Scientific assistants were sent abroad to establish laboratories for the investigation of the causes of all the destructive maladies of fruit-trees and plants, and the means for their eradication and treatment.

"Agricultural experiment stations" (in which these investigations are made) "are now in operation in all the States and Territories except Montana and Idaho. Of the fifty-five stations in the United States, fifty in forty-three States and Territories receive their support, wholly or in part, from the United States Treasury. The stations employ four hundred and fifty persons in the work of administration and inquiry. The mailing lists of the stations include about three hundred and fifty thousand names."

It is stated that these stations are the "recipients of the national bounty to the extent of considerably over a million and a half dollars annually."

The Fifty-first Congress of the United States has just passed into history. Among the many famous distinctions which it won was its title to the appellation, "The Billion-Dollar Congress."

Think of it, one thousand million dollars appropriated by a single Congress for the material interests of this nation! And in the multitudinous bills which provide for the disbursement of this enormous sum of money, *not one clause or paragraph appears which can, in any manner, be construed to apply directly to the elucidation of any one of the important and vital problems connected with the prevention of the infectious diseases with which the tax-paying people are constantly menaced or afflicted!*

What apology can be offered for such a monstrous inconsistency?

Let us suppose, for example, that the jobs and misappropriations included in the fifteen or twenty million-dollar River and Harbor Appropriation Bills, which are annually passed with the greatest *éclat*, chiefly for the purpose of furthering the interests of scheming and ambitious politicians, be applied to the encouragement of experimental research for the discovery of means for the prevention and cure of the infections and diseases which constantly menace the health and lives of the citizens of this great country, and we would have, without doubt, the best equipped public health department of any nation on the globe. Certainly I do not wish to be understood as opposing the protection of our harbors, and the improvement of our coast defences, with a view to the intimidation of a supposititious foe, in *just possible* invasion, or the encouragement of the great monetary interests connected with our merchant marine. Neither would I wish to discourage the immense subsidies and land grants for transcontinental railroads; the building of the great warships for the new navy, of which we will all one day be proud; nor yet would I for a moment deny the importance of protecting the fish hatcheries, or the Alaskan seals, or the payment of the enormous sum which seems to be required to settle the dispute as to our rights in the Behring Sea, in order that the interests of our half-breed fellow-citizens may be properly protected and their employers satisfactorily aggrandized.

I would not undervalue the efforts which our Congress has made in granting appropriations for the establishment of agricultural experiment stations, and the employment of experts to investigate "bacterial and fungus diseases of caterpillars," for the purpose of discovering a contagious germ which may be artificially transmitted to the damaging boll-worm of cotton; or for the importation of the parasites of the cabbage worm and Hessian fly; or for the payment of salaries of experimentalists on missions to Australia and New Zealand, to scour those infested lands to procure parasitic insects which would benefit the horticultural and agricultural interests of this nation!

I might carry this figure on almost *ad infinitum*. I might have exhausted my time and your patience had I undertaken to mention *all* this great Government of ours is doing and has done in vegetable pathology, botany, ornithology, mammology, entomology, animal pathology, and numerous other scientific departments.

Assuredly, I believe that these are commendable undertakings, and doubtless valuable to the material and moneyed interests of our people, to an extent which justifies the millions annually expended; but let me ask you to glance with me at another side to this picture. Does it seem possible that, with all these facts in view, the surprising statement can be made that the Congress which places such a high estimate upon the lives of plants and animals cannot find it consistent to appropriate one dollar for the preservation of *human* health and life?

Can it be that the free and enlightened Government of the United States, whose underlying principle is to "provide for the common defence" and "promote the general welfare," resourceful and prosperous to an extent far beyond the wildest conceptions of other civilized nations, having in its Treasury an annual surplus of receipts over expenditures mounting high into the millions, does not appreciate the need of providing for "common defence" against an invisible and relentless foe—a destructive force, at once intangible and imponderable, but powerful far beyond the reach of gunpowder and guns or arbitration bonds?

At this point and in conclusion let me formulate what I would propose, and what I hope in the near future to see established:

It has long been my conviction that there should be in this, as in every other nation, a systematically conducted central public health system, whether called a department, bureau, board, or otherwise; that it should have a responsible head; that it should have the coöperation, and assistance when required, of all state and municipal boards and authorities; that it should be a distinct and separate branch of the public service, having powers, duties, and privileges entirely its own; that it should be unhampered and undisturbed by political circumstances or changes, with ample funds and facilities for the elucidation and treatment of all the great and perplexing problems pertaining to the prevention of disease.

Whatever may be thought or said regarding the centralization of authority in a political sense, here, it seems to me, its advantages to the people of a nation are too apparent to admit the possibility of question.

National control of public sanitation is "protection" in its highest and most beneficent signification.

My own conception of our present pressing need is as follows:

I would have the National Board of Health, as at present provided, rehabilitated and charged with the duty of supervising, particularly all matters of public health in the *interior*, calling it, perhaps, the "Health Department of the Interior;" I would have the Marine Hospital Service, as at present constituted, especially clothed with powers relating to *external* quarantine; I would have both these departments retained, acting separately under ordinary circumstances, and jointly in certain contingencies when they arise; I would have in connection with this Health Department of the Interior numerous experiment stations established, which should be entirely under Government patronage and control, and fully equipped with laboratories—chemical, physical, and bacteriological—each with an efficient corps of well-trained scientists, upon the same general plan by which the agricultural experiment stations, previously mentioned, are operated; I would have these scientific observers made Government officers, with salaries sufficient to insure against their personal wants and pensions when retired, in order that their undivided attention might be given to the work for which they are employed; I would have them constantly commissioned to make original and experimental investigations into the ultimate causes of disease, wherever found, and required to report the results for publication and distribution.

As an auxiliary to this Board, I would have a National Congress of Health, to take the place of the present "Conference of State Boards," which shall meet at regular intervals —a representative body composed of delegates from each of the State and Territorial boards.

And when, as in logical sequence these proposed premises suggest, an *International Board of Health* shall be established, the most efficient state of development will be attained, and sanitary science will be a mighty messenger to indicate the approach of a perfected civilization, when the protection of the health and life of every human being will be regarded as the highest and most paternal function of the State.

Let us confidently cherish the hope that we soon shall see the day when the public indifference to this all-important subject will be overcome, and when our public servants will be induced to worship the powerful Mammon less and seek the beneficent shrine of the goddess Hygeia more.

The late lamented Samuel David Gross, the illustrious sage, the prince of American surgeons, at the dedication of the monument erected to the memory of the pioneer of abdominal surgery, Ephraim McDowell, gave utterance to the following significant farewell words:

"Young men of America! Listen to the voice of one who has grown old in his profession, and who will probably never address you again, as he utters a parting word of advice. The great question of the day is not this operation or that, not ovariotomy or lithotomy or hip-joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets—in a word, our surroundings, whatever and wherever they may be, whether in city, town, hamlet, or country; and the establishment of efficient town and State boards of health, through whose agency we shall be more able to prevent the origin and fatal effects of what are known as the zymotic, or preventible diseases, which carry so much woe and sorrow into our families, and often sweep like hurricanes over the earth, destroying millions of human lives in an incredible short time.

"The day has arrived when the people must be aroused to a deeper and more earnest sense of the people's welfare, and suitable measures adopted for the protection, as well as for the better development of their physical, moral, and intellectual powers.

"This is the great problem of the day—the question which you, as representatives of the rising generation of physicians, should urge, in season and out of season, upon the attention of your fellow citizens—the question which above and beyond all others should engage your most serious thoughts and elicit your most earnest coöperation.

"When this great object shall be attained, when man shall be able to prevent disease, and to reach, with little or no suffering, his three-score years and ten, so graphically described by the Psalmist, then, and not till then, will the world be a paradise."—*The Sanitarian.*

Simultaneous Ligature of Carotid and Subclavian Arteries.—Mr. Mackellar recently ligatured simultaneously the carotid and subclavian arteries in a case of probable innominate aneurysm at St. Thomas's Hospital. The patient, a man aged thirty-four, a constable of the Metropolitan Police, who had been in earlier years a professional runner and afterwards served in the cavalry, felt the aneurysm a month before he came under treatment in the hospital. A special point in the case is that he has undergone ligature of the superficial femoral artery on each side for popliteal aneurysms. The first operation was performed more than four years ago, the second about two and a half years since, and he carried on his duty as a constable until the appearance of the aneurysm for which he is now under care. Since the ligature of the femorals (also by Mr. Mackellar) he has done work in the mounted branch of the service. It is possible that a fall when on duty in November, when his horse fell with him and injured his chest, has had something to do with the causation of the aneurysm for which the recent operation has been rendered necessary. Up to the present, progress has been most satisfactory, the aneurysmal swelling is diminished in size, and the pulsation is considerably less.—*The Lancet.*

An Ounce of Camphor dissolved in three ounces of turpentine has been used in Columbia Hospital for Women to check secretion of milk in mastitis. It relieves pain, diminishes induration, and reduces inflammation. Care should be taken that the part should not be so tightly covered that the application shall produce irritation of the surface.

A Society for the Help of Discharged Lunatics.—The French Minister of the Interior has sent a circular note to the prefects of the different departments relative to the creation of benevolent societies, whose object it should be to help lunatics discharged from asylums. Many insane persons are perfectly harmless, and are only kept in asylums because they have no means of support, and are incapable of earning their living. The Minister urges on the prefects the desirability of their promoting the establishment of charitable societies for the purpose indicated.

NECROLOGY.

Dr. Milton Baldwin died at his home in East Orange, N. J., on February 29. He was born in Newark in 1821, studied medicine under Mott, Revere and Draper in the New York University, graduating in the second class of that school, in 1843. He settled in Newark soon after, and in 1848 became coroner of that city, also again from 1854 to 1858. He was at one time President of the Board of Councilmen, and of the Essex County Medical Society. In 1862, he was appointed to the surgical staff of the Ward General Hospital, at Newark, and there continued on duty until June, 1865. He was an interested member in the New Jersey Historical Society and other organizations, which made him exceptionally well-known throughout his State. He retired from active professional practice about 1885.

Dr. Epenetus P. Jarvis, of Centre Moriches, N. Y., died February 24, aged 68 years. He was a graduate of the University Medical College, class of 1852. He had been a prominent and respected practitioner of his locality nearly forty years. The cause of his final illness was ascribed to septicæmia, consequent upon an ingrown toe-nail.

Dr. Charles A. Savory, of Lowell, Mass., who died on the 2d ult., had been a member of the Association from 1877. He was a native of Beverly, Mass., having been born there in 1813. He was graduated from Dartmouth College in 1836. He resided in Hopkinston, N. H., a few years, removed to Philadelphia, where he temporarily held the chair of obstetrics in the Philadelphia Medical College. In 1848, he took up his residence permanently in Lowell, and became highly successful both in general and ophthalmic surgery. He was an early and ardent advocate of antiseptic surgery.

Wm. H. Bunce, M.D., died at his residence in Oberlin, O., February 13, where he practiced his profession from the time of his graduation until his death. Dr. Bunce was born in Paterson, N. J., June 29, 1830. He came of the ancient Scottish house of Kennedys, his mother being the only daughter of Sir Archibald Kennedy; the present head of the house being the Marquis of Ailsa. He was married June 27, 1852, to Ellenor S. Conant, who survives him, also, two daughters and one son, Dr. W. C. Bunce. He was full surgeon with rank as Major during the war, was connected with a number of medical societies, and had at various times held prominent positions in them. Has been known as one of the leading surgeons of northern Ohio. There was a peculiar gentleness in his ministrations to those who came under his care, which made them feel he was not only their physician but their friend, and it may be well said that by his skill and worth, that he has built up a monument for himself, that will live after him in the hearts that learned to love him.

MISCELLANY.

The Chairman of the Section of Obstetrics and Diseases of Women would be glad to receive the titles of proposed papers from those who desire to take part in the proceedings of the Section at the next meeting of the Association, as it is important the titles should be presented as early as possible, in order to make proper arrangements for their careful consideration and discussion.

E. E. Montgomery.

1818 Arch St., Philadelphia, March 5th, 1892.

Medico-Chirurgical College of Philadelphia. — The Chair of Obstetrics has become vacant through the resignation of Dr. E. E. Montgomery, who will hereafter devote himself entirely to the Chair of Gynecology.

New Buildings for the Jefferson Medical College of Philadelphia.—The board of trustees and faculty of the Jefferson Medical College have just completed the purchase of two large lots on Broad street, giving them a frontage of about 300 feet and a depth of 150 feet, upon which they will proceed to erect at once a handsome hospital, lecture hall and laboratory building. The estimated cost of the buildings is $500,000. The hospital will be built, not only as a suitable building in which to care for the sick and injured, but also will be provided with a large amphitheatre for clinical lectures. The basement of the hospital building will be given over to the various dispensaries, each of which will be provided with large waiting and physicians' rooms, as well as rooms for direct teaching of students. The buildings will be absolutely fire proof and provided with patent sprinklers in case their contents catch fire. By the erection of three commodious buildings, the laboratories where delicate work with the microscope or apparatus is carried on, will be separated from the college hall, where didactic lectures are given, and so will be free from any jarring produced by the movement of large classes. With the hospital on one side affording clinical facilities, and the laboratory on the other side of the college hall for scientific research and training the college will be most favorably situated for giving thorough instruction in medicine. Further than this, immediately across the street is the Howard Hospital and on the adjoining corner the Ridgway branch of the Philadelphia Free Library, which contains all the scientific works belonging to this wealthy corporation. The new site is even more favorably situated in regard to the centre of the city than the old one at Tenth and Sansom streets. The move has been made necessary by the large number of students who are now being instructed in this institution and because the faculty desire to keep the school and hospital in the foremost rank of medical education in this conntry.

The buildings will be ready for occupancy in the session of 1893–94.

The Medical Society of the Missouri Valley will meet at Chickering Hall, Leavenworth, Kansas, March 17 and 18, 1892.

The following papers will be read:

1. Microcephalus. Report of Case. By Dr. J. F. Binney, Kansas City, Mo.
2. Etopic Pregnancy. Report of Case. By Dr. P. D. St. John, Wichita, Kan.
3. Tired Ovaries. By Dr. J. M. Richmond, St. Joseph, Mo.
4. Oöphorectomy. Case and Results. By Dr. J. H. Van Eman, Leavenworth, Kan.
5. Modern Therapeutics. By Dr. O. B. Campbell, St. Joseph, Mo.
6. Immense Abdominal Distention, preceeding and following labor. By Dr. M. A. Kelso, Clyde, Mo.
7. A New Micro-Parasite. By Dr. M. F. Weymann, St. Joseph, Mo.
8. Review of a few Cases of Rectal Surgery. By Dr. S. G. Gant, Kansas City, Mo.
9. La Grippe of the Larynx. By Dr. Daniel Morton, St. Joseph, Mo.
10. General Paralysis. Report of Two Cases. By Dr. F. S. Thomas, Council Bluffs, Iowa.
11. Uterine Diseases of Aged Women. By Dr. Adda Bowerman, Reynolds, Neb.
12. Abscess of Thyroid Gland. Report of Six Cases. By Dr. Hal Foster, Kansas City, Mo.
13. Osteo Sarcoma about Knee joint. Report of Five Cases. By Dr. Jacob Geiger. St. Joseph, Mo.
14. Valvular Lesions of Heart, Pathology and Treatment. By Dr. Joseph Sharp, Kansas City, Mo.
15. Relations of Phthisis Pulmonalis to Fistula in Ano. By Dr. Leon Straus, St. Louis, Mo.
16. Present Problems in Bacteriology. By Dr. P. I. Leonard, St. Joseph, Mo.
17. Metorrhagia occurring about the Menopause. By Dr. T. J. Beattie, Kansas City, Mo.
18. Chronic Rhinitis, effects upon middle ear. By Dr. T. E. Potter, St. Joseph, Mo.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending March 5, 1892.

Medical Inspector Geo. R. Brush, ordered to Navy Yard, Brooklyn, N. Y.

Medical Inspector Edw. Kershner, from Navy Yard, New York, and to U. S. S. "San Francisco."

Medical Inspector J. H. Clark, from the U. S. S. "San Francisco," and ordered home.

Medical Director A. L. Gihon, detached from Naval Hospital, and to special duty at New York, attending officers of the Navy and Marine Corps.

Medical Director W. K. Scofield, detached from special duty at New York, attending officers of Navy and Marine Corps, and wait orders.

Medical Director E. S. Bogert, detached from Medical Examining Board, and to Naval Hospital, Brooklyn, N. Y.

Asst. Surgeon C. M. De Valin, to Naval Hospital, Norfolk, Va.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending February 27, 1892.

Surgeon George Purviance, detailed as chairman Board of Examiners. February 20, 1892.

Surgeon J. B. Hamilton, detailed for special duty. February 18, 1892.

Surgeon G. W. Stoner, detailed as member Board of Examiners. February 20, 1892.

Surgeon Fairfax Irwin, ordered to Norfolk, Va., for temporary duty. February 16, 1892. Granted leave of absence for seven days. February 24, 1892.

Surgeon H. R. Carter, detailed as recorder, Board of Examiners. February 20, 1892.

P. A. Surgeon W. A. Wheeler, ordered to examination for promotion. February 16, 1892.

P. A. Surgeon G. T. Vaughan, detailed as executive officer, Supervising Surgeon-General's Office. February 27, 1892.

National and State Medical Societies of America.

AMERICAN MEDICAL ASSOCIATION.

Annual meeting at Detroit, Mich., June 7.

W. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa.

Henry O. Marcy, M.D., Prest., Boston, Mass

American Association of Andrology and Syphilology.—Annual meeting at Richfield Springs, N. Y., June 20. J. A. Fonlyce, M.D., Sec., 60 Park Ave., New York City; A. T. Cabot, M.D., Prest., 3 Marlborough St., Boston, Mass.

American Association of Obstetricians and Gynecologists.—Annual meeting at St. Louis, Mo., September 20. William Warren Porter, M.D., Sec., Buffalo, N. Y.; Albert VanderVeer, M.D., Prest., Albany, N. Y.

American Academy of Medicine.—Annual meeting at Detroit, Mich., June 4. Charles McIntire, M.D., Sec., Easton, Pa.; Phineas S. Conner, M.D., Prest., Cincinnati, O.

Association of American Physicians.—Annual meeting at Washington, D. C., May 24. Henry Mun, M. D. Sec., 33 Elk St., Albany, N. Y.; Henry M. Lyman, M.D., Prest., 65 Randolph St., Chicago, Ill.

American Dermatological Association.—Annual meeting at Cushing's Island, Portland Harbor, Me., September 13. George Thomas Jackson, M.D., Sec., 14 E. 31st St., New York City; E. B. Bronsón, M.D., Prest., 123 West 34th St., New York City.

American Gynecological Society.—Annual meeting at Brooklyn, N. Y., September 20. Henry M. Coe, M.D., Sec., 27 E. 64th St., New York, N. Y.; John Byrne, M.D., Prest., Brooklyn, N. Y.

American Laryngological Association.—Annual meeting at Boston, Mass., May ——. Chas. H. Knight, M.D., Sec., 20 West 31st St., New York City; S. W. Langmaid, M.D., Prest., Boston, Mass.

American Ophthalmological Society.—Annual meeting at New London, Conn., July 20. S. B. St. John, M.D., Sec., 43 Pratt St., Hartford, Conn.; Hasket Derby, M.D., Prest., Boston, Mass.

The American Orthopedic Association.—Annual meeting at New York, September 20. John Ridlors, M.D., Sec., 337 West 57th St., New York, N. Y.; Benj. Lee, M.D., Prest., 1532 Pine St., Philadelphia, Pa.

The Medico-Legal Society.—Annual meeting, New York. Clark Bell, Esq., Sec., New York, N. Y.; Hon. H. M. Somerville, Prest., New York, N. Y.

National Association of Railway Surgeons.—Annual meeting at Washington, D. C. E. R. Lewis, M.D., Sec., Kansas City, Mo.; J. H. Murphy, M.D., Prest., St. Paul, Minn.

Ohio Valley Medical Society.—Annual meeting at ——. Wm. S. Hoy, M.D., Sec., Wellston, Ohio; Ed. H. Fravel, M.D., Prest., Poca, W. Va.

STATE.

Medical Association of the State of Alabama.—Annual meeting at Mongomery, April 12. Thomas Alexander Means, M.D., Sec., Mongomery, Ala.; Benjamin James Baldwin, Prest., Montgomery, Ala.

State Medical Society of Arkansas.—Annual meeting at Little Rock, June 2. L. P. Gibson, M.D., Sec., Little Rock, Ark.; J. S. Shibley, M.D., Prest., Paris, Ark.

Connecticut Medical Society.—Annual meeting at New Haven, May 24. N. E. Windin, M.D., Sec., 174 Fairfield Ave., Bridgeport, Conn.; C. A. Lindsley, M.D., Prest., Bridgeport, Conn.

The Medical Society of the State of California.—Annual meeting at San Francisco, April 19. Wm. Walter Kerr, M.D., Sec., 600 Sutter St., San Francisco, Cal.; O. O. Burges, M.D., Prest., 329 Geary St., San Francisco, Cal.

Colorado State Medical Society.—Annual meeting at Denver, June 21. H. M. McLaughlin, M.D., Cor. Sec., Denver, Col.; Wm. M. Strickler, M.D., Prest., Colorado Springs, Col.

Florida State Medical Society.—Annual meeting at Key West, April 5. J. Harris Pierpont, M.D., Prest., Jacksonville, Fla.; J. D. Fernandiz, M.D., Sec., Jacksonville, Fla.

The Medical Association of Georgia.—Annual meeting at Columbus, April 20. G. W. Mulligan, M.D., Prest., Washington, Ga.; Dan H. Howell, M. D., Sec., Atlanta, Ga.

Illinois State Medical Society.—Annual meeting at Vandalia, May 17. David W. Graham, M.D., Sec., 133 Clark St., Chicago, Ill.; Chas. C. Hunt, M.D., Prest., Dixon, Ill.

Indiana State Medical Society.—Annual meeting at Indianapolis, May 12. E. S. Elder, M.D., Sec., 44 E. Ohio St., Indianapolis, Ind.; Edward Walker, M.D., Prest., Evansville, Ind.

Iowa State Medical Society.—Annual meeting at Des Moines, May 18. C. F. Darnall, M.D., Sec., West Union, Ia.; G. F. Jenkins, M.D., Prest., Keokuk, Ia.

State Medical Society of Kansas.—Annual meeting at Fort Scott, May 3. W. S. Lindsay, M.D., Sec., Topeka, Kan.; J. E. Oldham, M.D., Prest., Wichita, Kan.

Kentucky State Medical Society.—Annual meeting at Louisville, May 1. Steele Bailey, M.D., Sec., Stanford, Ky.; H. Brown, M.D., Prest., Hustonville, Ky.

The Louisiana State Medical Society.—Annual meeting at New Orleans, April 27. P. B. McCutchon, M.D., Sec., New Orleans, La.; J. B. Elliott, Prest., New Orleans, La.

Maine Medical Associatiom.—Annual meeting at Portland, June 8. Chas. D. Smith, M.D., Sec., 126 Free St., Portland, Me.; Edwin M. Fuller, M.D., Prest., Bath, Me.

Medical and Chirurgical Faculty of Maryland.—Annual meeting at Baltimore, April 26. Joseph T. Smith, M.D., Cor. Seć., 1010 Madison Ave., Baltimore, Md.; W. H. Welch, M.D., Prest., Johns Hopkins Hospital, Baltimore, Md.

Massachusetts Medical Society.—Annual meeting at Boston, June 7. F. W. Goss, M.D. Sec., Roxbury, Mass.; A. H. Johnson, M.D., Prest., Salem, Mass.

Michigan State Medical Society.—Annual meeting at Flint, May 5. Charles W. Hitchcock, M.D., Sec., Detroit, Mich.; George E. Ranney, M.D., Prest., Detroit, Mich.

Minnesota State Medical Society.—Annual meeting at St. Paul, June 15. Chas. B. Whitherle, M.D., Sec., Endicott Arcade Bldg., St. Paul, Minn.; Park Ritchie, M.D., Prest., St. Paul, Minn.

Medical Association of Missouri.—Annual meeting at Pertle Springs, Johnson Co., May 17. L. A. Berger, M.D., Rec. Sec., Kansas City, Mo.; T. F. Prewitt, M.D., Prest., St. Louis, Mo.

Medical Association of Montana.—Annual meeting at Butte, April 20. G. H. Barbour, M.D., Cor. Sec., Helena, Mont.; J. H. Owings, M.D., Prest., Deer Lodge, Mont.

New Hampshire Medical Society.—Annual meeting at Concord, June 20. G. P. Conn, M.D., Sec., Concord, N. H.; M. W. Russell, M.D., Prest., Concord, N. H.

New York State Medical Association.—Annual meeting at New York, November 15. E. D. Ferguson, M.D., Sec., Troy, N. Y.; J. B. Andrews, M.D., Prest., Buffalo State Hospital, Buffalo, N. Y.

The Medical Society of the State of New York.—Annual meeting at Albany, Feb. 7, 1893. F. C. Curtis, M.D., Sec., 17 Washington Ave., Albany, N. Y.; A. Walter Suiter, M.D., Prest., cor. Court and Main Sts., Herkimer, N. Y.

Medical Society of New Jersey.—Annual meeting at Atlantic City, June 28. W. Elmer, M.D., Cor. Sec., Trenton, N. J.; E. J. Marsh, M.D., Prest., Paterson, N. J.

Nebraska State Medical Society.—Annual meeting at Omaha, May 10. L. A. Merriam, M.D., Cor. Sec., 15th and Furman Sts., Omaha, Neb.; Charles Inches, M.D., Prest., Scribner, Neb.

Medical Society of the State of North Carolina.—Annual meeting at Wilmington, May 24. J. M. Hays, M.D., Sec., Oxford, N. C.; Wm. T. Cheatham, M.D., Prest., Wilmington, N. C.

The Ohio State Medical Society.—Annual meeting at Cincinnati, May 3. T. V. Fitzpatrick, M.D., Sec., Cincinnati, O.; G. A. Collamore, M.D., Prest., Toledo, O.

Oregon State Medical Society.—Annual meeting at Portland, June 2. F. Cauthorn, M.D., Prest., Portland, Ore.; C. H. Wheeler, M.D., Sec., Portland, Ore.

The State Medical Society of Pennsylvania.—Annual meeting at Harrisburg, May 17. Samuel L. Kurtz, M.D., Prest., Reading, Pa.; Wm. B. Atkinson, M.D., Sec., 1409 Pine St., Philadelphia, Pa.

Rhode Island Medical Society.—Annual meeting at Providence, June 2. William H. Polmer, M.D., Prest., Providence, R. I.; George D. Hessey, M.D., Cor. Sec., Providence, R. I.

South Dakota Medical Society.—Annual meeting at Salem, June 8. M. Ware, M.D., Prest., Salem, So. Dak.; W. C. Warne, M.D., Sec., Mitchell, So. Dak.

South Carolina Medical Association.—Annual meeting at Georgetown, April 28. J. R. Bratton, M.D., Prest., Yorkville, S. C.; Mozyck Ranluel, M.D., Cor. Sec., 103 Wood St., Charleston, S. C.

Tennessee State Medical Society.—Annual meeting at Knoxville, April 12. J. W. Pierce, M.D., Prest., Humboldt, Tenn.; D. E. Nelson, M.D., Sec., Chattanooga, Tenn.

The Texas State Medical Association.—Annual meeting at Tyler, April 26. W. H. Wilkes, M.D., Prest., Waco, Texas; H. A. West, M.D., Sec., Galveston, Texas.

Vermont State Medical Society.—Annual meeting at Montpelier, October 14. C. S. Caverly, M.D., Prest., Rutland, Vt.; D. C. Hawley, M.D., Sec., Burlington, Vt.

Medical Society of Virginia.—Annual meeting at Luray, October 1. H. Grey Latham, M.D., Prest., Lynchburg, Va.; J. F. Winn, M.D., Cor. Sec., 714 E. Franklin St., Richmond, Va.

The Medical Society of the State of Washington.—Annual meeting at North Yakima, May. H. C. Wilson, M.D., Prest., Port Townsend, Wash.; Geo. S. Armstrong, M.D., Sec., Olympia, Wash.

The Wisconsin State Medical Socity.—Annual meeting at Milwaukee, May 4. George F. Witter, M.D., Prest., Grand Rapids, Wis.; Charles S. Sheldon, M.D., Cor. Sec., Madison, Wis.

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ORIGINAL ARTICLES.

ETHER ANÆSTHESIA.

Read before the Kings County Medical Association, February 9, 1892.

BY J. D. RUSHMORE, M.D.,
OF BROOKLYN, N. Y.

Mr. President and Members of the Kings County Medical Association:—It is provided by the by-laws of this Association that "at the February meeting each year the nine o'clock hour shall be devoted to an address from the president of the preceding year, upon the progress made during the year in that branch of the medical art or science in which he may have been specially interested." It is therefore in accordance with a free interpretation of the above by-law that a paper is presented for your consideration on the subject of ether anæsthesia, which may properly be classed among the medical arts; but, if I confined myself to the strict letter of the law, it is quite certain that I shall fail to present anything that can properly be considered to represent progress made during the year. It is not always certain at the close of a year what progress has really been made in medicine. Long and varied trials are necessary before theories are established and become the facts of medical science; and many a claim that starts out under favoring breezes is lost in transit or wrecked before reaching its destined haven. Cocaine and tuberculin are fresh and striking examples of the necessity for delay in pronouncing the final verdict on such claims, and illustrate what time will do to make or mar the reputation of men and methods. So, I venture to express in the following pages some thoughts that are the outcome of clinical experience extending over a number of years in the administration of ether as an anæsthetic; some of them have reached the voting age, and some are still minors. Many of them are firmly fixed in my mind and not lightly to be abandoned; others are offered with a certain amount of hesitancy; but all, I trust, subject to the changes that may be produced by larger experiences, either of my own or of others.

The subject of ether anæsthesia is chosen because it seems to furnish a topic of interest to every member of the profession and concerns the medical as well as the surgical practitioner, although not to the same extent, and in the presentation of the subject I do not desire to make a comparison between ether and other anæsthetics, interesting as that might be, nor to inflict on your patience statistical tables, however valuable they might be; but to present what my experience has forced upon me concerning the disagreeable symptoms and conditions, that may arise during its administration, the alleged dangers of ether anæsthesia and the methods that have been found useful as well as some that have been found useless in either preventing or relieving these dangers or disagreeable conditions, and the paper will fall far short of accomplishing its object if it is considered simply as a formal address not to be discussed or commented upon. I trust it may, like any paper presented to the Association, elicit the expression of the experiences of the members of the Association, whether they are in harmony with those of the writer or at variance with them. The disagreeable symptoms that may arise during the administration of ether may be referred mostly to the stomach, the respiratory tract, the brain and nervous systems, and the heart; while the dangerous symptoms are traceable to the effect of the anæsthetic, either immediate or remote, on the brain, the heart, the stomach and the kidneys. I feel quite certain that with the proper preparation of the patient and an intelligent use of the anæsthetic, both the unpleasant symptoms and the real dangers of ether anæsthesia may be avoided in the large proportion of cases, and it will be quite exceptional to be annoyed by the former, or made anxious concerning the patient's recovery by the presence of the latter.

When proper precautions are not taken in the preparation of the patient, and especially when the anæsthetic is administered by one who is not familiar with its effects, it makes an onlooker pause in expressing the belief that anæsthesia is the greatest boon conferred on mankind during the present century; but on the other hand, when proper preliminary measures have been carried out and the administrator is one, who, by experience, has been taught the many tricks that ether plays, and still better how to avoid them, we may surely endorse every claim that is made for it, and rejoice in its gentle and potent aid.

Not a little importance should be attached, I think, to the preparation, where time admits, of the patient for a day before the operation to secure control of the quantity and variety of food the patient should take, to see that the bowels are moved by enema, or by more active measures where the tongue is loaded and the liver inactive. In private practice this is usually not difficult; but among dispensary patients, particularly those who, to save time, desire to enter the hospital on the day of the operation, it is especially important. The most careful directions in regard to food and medicine will oftentimes be entirely forgotten or ignored, and the penalty is paid in stomach irritation at times prolonged and distressing. It is always best in these cases, to insist on the patients entering the hospital in the evening of the day preceding the day of operation, and thus secure the carrying out of the directions given. A mild laxative, like fluid extract of Buckthorn, comp. licorice powder, etc., is sufficient except in cases where the bowels are to be kept quiet for several days after the operation, when a more active cathartic is needed. In cases of nervous or apprehensive patients a quieting dose of one of the bromides, chloral, sulfonal somnal, etc., rarely opium, renders the nervous system more comfortably tolerant of the anæsthetic. An easily digested breakfast on the day of operation, and a bowl of broth two or three hours before the administration of the ether has seemed to me the best way to treat the stomach. I think all agree that the stomach should be empty at the time of the operation, but I am persuaded that a too prolonged fast is undesirable, and renders the stomach irritable rather than the reverse. In very nervous patients it seems to me well to make even the breakfast of the day of operation consist of fluid alone, a bowl of coffee or strong broth preferably; for the need of this unusual care in such cases finds striking illustration in the vomiting of solid food during anæsthesia that had been taken as much as twelve hours before the operation, and that had been retained in the stomach only partly, if at all, digested.

Beyond the measures above indicated my own experience has not encouraged me to go in the general preparation of the patient for avoiding the objections to ether. Many years ago I tried in a pretty large number of cases, moderately large doses of the bromides from an hour to twenty-four hours before the administration of the ether with the idea specially of preventing vomiting, but failed to find any beneficial results from their administration. Chloral also produced negative results in my hands. With these preliminary measures attended to, I have learned to feel that the most important thing I could do for my patient is to administer five or six minims of Magendie's solution of morphia with from $\frac{1}{100}$ to $\frac{1}{60}$ of a grain of sulphate of atropia hypodermically one hour before the ether is administered; a smaller dose of the opiate, of course, should be given to children, but the dose of atropia had better not be diminished. A larger dose of Magendie's solution, twelve to fifteen minims as has been recommended, is not only unnecessarily large, but dangerous. This use of morphia and atropia has many advantages; it quiets nervous excitement, it renders the patient more susceptible to the ether, it lessens the liability to vomiting, it saves ether, it controls the pain that the patient is liable to suffer after the operation, it counteracts the heart depression of the prolonged use of ether, it prevents in part free and exhausting perspiration and keeps the pharynx, larynx and bronchial mucous membrane from pouring out mucus to nauseate or choke the patient, and to overload his lungs and thus interfere immediately with the proper aeration of the blood, and to increase what some authorities consider one of the dangers of ether, namely, pneumonia. No originality, of course, is claimed for this use of morphia and atropia, for it is not infrequently employed; but it seems to me that insufficient emphasis has been laid on its value. Several years since a child about six of age had given to it by mistake a half grain instead of $\frac{1}{120}$ of a grain hypodermically before a slight operation on the leg—curetting carious bone, I believe. No morphia was used in this case. Not until an hour or two after the effects of the ether had passed off did the symptoms of belladonna poisoning manifest themselves. They were characteristic, were marked and passed off in six or eight hours. The child did not die. Making all allowance for the tolerance of belladonna in children, I am persuaded that the ether had to do with counteracting the effects of what might and probably would have been a lethal dose of the drug. Is it not reasonable to think that atropia may, partly in its physiological action and partly in a way that we cannot fully explain, act in such a way as to diminish, if present, the unpleasant and dangerous effects of ether?

In regard to the use of alcoholic stimulants immediately preceding the administration of ether, it has always seemed to me to be contra-indicated. In the face of common practice I make this statement with some hesitation, and yet in persons who are not in the habit of using alcohol it has seemed to me to add to the risk of nausea and vomiting, and both in these cases and in users of alcohol to prolong the first or so-called stage of excitement. If anything is needed in addition to the morphia and atropia, I think we have it in the anæsthetic itself which, if not carried too far or used too long, is more efficient than alcohol in its cardiac stimulating effects. Indeed, there is not wanting authority for the belief that in the later stages of ether depression, alcohol only adds to the danger of cardiac weakness.

It is hardly necessary to state that artificial teeth, tobacco, pins, etc., should be removed from the mouth before the anæsthetic is given, and that the clothing about the chest should be loose enough to allow of the freest expansion of the chest in respiratory movements, that the ether should, as a rule, be administered with the patient out of the sight of the instruments to be used, and that the anæsthesia should be complete before the operation is begun; a primary incision before this stage is reached will have the effect of rousing the patient, as sudden fright will sober a drunken man, and the same effect will follow even moderate talking during the first stage of ether sleep. It is always wise to tell the patient of the primary unpleasant sensations he may experience, the, to many, disagreeable odor, the coughing, the sense of choking, the disposition to pull the inhaler from the mouth, the increased heart action, and also to assure him of his safety and that by exercising his self-control he can materially assist the surgeon and quietly pass into a state of comfortable sleep. If at the same time the patient is allowed to take the ether can or bottle between his hands and breathe the ether vapor for a moment or two before the inhaler is placed over the face he becomes accustomed to the odor and the effect on his breathing, and the ether produces a not inappreciable degree of pharyngeal anæsthesia. These preliminary points, that seem perhaps tiresome in the hearing, are mentioned as more or less important in bringing a patient under the influence of ether with the least risk to him and the least discomfort to himself and the anæsthetizer. It is hardly necessary to say that all these means may be and, in emergency cases and among children, often many of them must be neglected and still the patient is brought under the influence of the anæsthetic. The point under consideration is not whether unconsciousness can be produced with ether, nor how quickly, but how best as regards the patient's comfort and safety. As to the inhaler that shall be used, I think it makes very little difference whether a simple cone made of a towel or newspaper and a few pins or a more complicated and expensive apparatus is employed, provided an experienced hand and brain have control of it, and this experience we should always try to secure, and if the experienced anæsthetizer is at the same time the family physician, which is not infrequently the case, the surgeon and patient are both fortunate. The numerous ether inhalers all have their advantages in economy of ether used, in allowing entrance of air in given and regular amounts, in excluding air, almost altogether, in cleanliness, in securing freedom from a sense of suffocation that is associated with the use of some of the various inhalers, in lowering the temperature of the ether vapor and thus rendering it less irritating, in rapidity of effect, etc; but all of these, with the exception of modifying the temperature of the ether, may be secured with the cone. And how far the vapor is cooled in instruments devised for this purpose seems to me still a matter of doubt if we look for results based on actual thermometric records. The anæsthetic should be administered not too rapidly; ten minutes is a fair average allowance. To hurry it seems to me a mistake; it is unwise, therefore, to insist on the patients breathing rapidly, or to cough violently, etc., undoubtedly deep breathing that goes on easily or is secured when the patient is disposed to hold his breath, taking the cone entirely away from the face two or three times in the first minute or two, will enable the patient to get the air that he feels he needs, and will save him from the struggling, and sense of suffocation and cyanosis that are so frequent when the anæsthetic is administered too rapidly. Given in this way it has been the rare exception that I have not in private practice been able to put the patient to sleep without struggle and with the minimum amount of discomfort. When surgery of necessity prolongs many modern operations to two hours or more in their performance, we may well allow the patient four or five more minutes than are absolutely necessary for complete anæsthesia, to secure the added comfort in coming and perhaps staying under its influence. I am free to say, however, that in hospital practice, when many of the cases are either under the influence of alcohol at the time of the operation, or which is worse, are chronic abusers of alcohol, it is often difficult to secure a satisfactory anæsthesia without using a good deal of physical restraint, at times almost suggesting "crowner's quest"—six on the body. But I can also state that even in these cases I have never had a patient whom I could not anæsthetize with ether. It would be an absurd claim to make that such cases do not exist; I am only stating my own experience, at the same time saying that I have seen ether abandoned when it appeared to me with proper care it might, and probably would have succeeded.

With the patient under the anæsthetic even with all the precautions mentioned, certain accidents may occur; the tongue may, by falling back, interfere with respiration; this may be overcome by turning the head to one side and pushing the lower jaw forward with the finger behind the angle of the jaw and thus avoid the removal of the inhaler which renders the patient liable to come partially out from the ether, and injuring the tongue, by applying forceps to it in order to draw it forward. The ease with which this difficulty is overcome indicates that the trouble is due to a paralysis rather than a spasm of the muscles. The evidence of complete anæsthesia for ordinary operations is the insensitiveness of the cornea to the touch of the finger; but when the parts about the perineum are the seat of operation a more profound anæsthesia must be produced. The anæsthetizer will always bear in mind the greater weight of ether vapor than air, and its inflammability, especially at night operations, or when the cautery is to be used.

Vomiting is one of the disagreeable effects of ether. If it is administered in the manner suggested in this paper it is in my experience exceptional to meet this symptom. It depends sometimes on too rapid anæsthesia, on our inability to prepare the patient for the operation, on alcoholism, acute or chronic, on motion of patient's body in applying dressings. It is best relieved by a little more ether, and firm pressure over the epigastrium has been found useful. When it occurs after the patient is regaining or has regained consciousness it is likely to be associated with or caused by other nervous manifestations such as laughing, crying, etc., and has been controlled best by hot water internally, small doses of cocaine, ice, champagne, and the many anti-emetics in use are more or less successful. By straining, vomiting may be productive of harm in disturbing the relation of wound flaps, and by vascular tension giving rise to hæmorrhage from vessels imperfectly blocked up. I can quote no statistic as to the exact per centage of cases in my own experience in which vomiting occurs, but I feel sure that ten per cent., taking all cases, would be a generous allowance. The other disagreeable conditions that arise during the etherization may be considered to a very large extent preventible symptoms, and dependent either on the patient's state or some fault in the administration of the anæsthetic.

Beside the symptoms already detailed that may arise, we have certain conditions in the lungs, heart and kidneys that necessitate the exercise of very unusual care in the employment of ether, although they have not led me in more than one case to abandon the use of ether for other anæsthetics. That case was one of high amputation of the thigh in a very weak boy with compound fracture of femur and prolonged suppuration. Nitrous oxide was used with entire success; but subsequent experience in similar cases has led me to feel that ether could have been safely used in this boy's case.

The patient is always entitled to a careful examination of the lungs, heart and kidneys before the use of ether is decided upon, and if it is employed when these organs are diseased, its action should be most carefully watched, especial attention being directed to the avoidance of venous engorgement, so often produced in the early stage of anæsthesia. I have been obliged to employ ether in cases of old persons with emphysema and with chronic bronchitis, they having taken the ether moderately, fifteen or twenty minutes being consumed sometimes before the necessary effect has been produced. In a few cases of phthisis in the early stage I have employed ether without bad results, and when these cases are sent purposely to breathe the cold winter air of some of our consumption cures, and do so with benefit, we may hesitate to believe that the temperature of ether vapor in itself is responsible for inflammatory troubles that develop in the lung, in the small number of cases where these results follow the use of the anæsthetic. Surgical pneumonia is a thing to be dreaded, but more exact experience is desirable in reaching a conclusion as to the relative importance of the anæsthetic and the operation itself in producing the inflammatory trouble; and the traumatism present in many cases where no operation is performed and no ether given, must be credited with bearing a causal relation to the lung inflammation. Cases of fracture of the larger bones in elderly people furnish illustrations of pneumonia due in some way to the patient's original injury. And furthermore, if the anæsthetic is to be made responsible for a pneumonia following its use, the inflammation ought to follow promptly the use of the anæsthetic, and not be attributed to it when the patient is for two or three days free from any pulmonary symptoms.

In considering the cardiac conditions that call for unusual care in giving ether, it has seemed to me that the right heart needs especial watching, that it does not become overloaded. It has been a common experience to have a weak pulse grow fuller, and in a few instances an irregular one to become regular, under the inhalation of ether vapor, and to have thus a feeble heart benefited by its use. I never have had occasion to use ether in a case of aortic aneurism, but in aneurisms in other parts of the body, abdominal, carotid and popliteal, it has not produced any increased tension that has been appreciable to the rough test of the hand. It is quite easy to believe that with the sac worn very thin, it might be the exciting cause of a rupture, with its rapidly disastrous results.

We are more apt to ignore the kidneys than the heart and lungs in reference to the propriety of administering ether; but their condition is not less important, perhaps. Some surgeons even are on record as stating that ether as an anæsthetic should not be used in cases of even suspected acute or chronic nephritis, and that ether is contraindicated in all affections that impair the integrity of the renal function. As I have already stated, the urine should be examined not only for albumin, but a *complete* examination made of it, including the test for urea. In one case of pregnancy operated upon by me, with slight amount of albumin present, an operation lasting half an hour was followed by no untoward symptoms. In several cases where the renal symptoms indicated the presence of a cirrhotic kidney, no bad effects followed the use of the ether. Beyond this my experience does not go. I never have had occasion to operate upon a patient with badly crippled renal action, and I will be pardoned, therefore, if I quote somewhat freely from a paper read before the New York Surgical Society by Dr. R. F. Weir, January 8, 1890, entitled "Does Ether Anæsthesia injuriously Affect the Kidneys?" In support of an affirmative answer to this question may be cited the opinion expressed by Dr. D. A. Emmet, that "to the effects of the anæsthetic I attribute the chief danger attending the operation (cystotomy) in the advanced stages of the disease, while, on account of the irritability of the bladder, its use is indispensable. As the kidneys are barely able to perform their function sufficiently well to preserve life, the balance is easily lost in the attempt at elimination, and death from uræmia rapidly takes place."

A case is reported of amputation of arm, where heart failure showed itself after a few inhalations of ether, and operation finished without anæsthetic. Fever and delirium in a few days; death in two weeks without any ante-mortem urinary examination. Acute fatty degeneration of kidneys found post-mortem. Query, Was not this ether effects? Dr. Weir's comment is that the cause of death was septicæmia, and not ether.

Another case is reported of cataract operation in a child under ether. Convulsions two hours after operation, coma and death two hours later. After death intense congestion and parenchymatous and fatty degeneration of kidneys found.

Some kidney changes found post-mortem in another cataract operation under ether. Albumin not discovered until seventeen days afterward, with granular and fatty casts. Death on eighteenth day. Two post-mortems reported by the late Wesley M. Carpenter, of extensive kidney lesions, one case of recto-vaginal fistula, death on table just before completion of operation, heart not examined; the other, character of operation not stated, death eight hours afterward, patient going to water-closet, breathing stertorously, where, beside kidney lesion, marked mitral disease and decided atrophy of right ventricle were found.

Another case with normal kidneys had uterus curetted, no bad results; a year later, with previous evidence of slight catarrhal nephritis, curetting repeated under ether. Collapse in twenty-four hours, scanty urine, albumin abundant, hyaline, bloody and granular casts in abundance. Temperature not given, and the renal trouble attributed in good part by the writer to septic processes.

On the other hand, as favoring a negative reply to the question that forms the title of Dr. Weir's paper, are the following conclusions of Dr. Feutin, of Berne, based upon his experiments on animals and upon 150 cases wherein ether was given, the time noted, and the amount consumed:

1. That ether has no perceptible effect upon the healthy kidneys of animals—who, moreover, are more susceptible than mankind to its influence.
2. That it is not dangerous in persons whose kidneys are slightly diseased.
3. That subsequent disturbances of circulation in the kidney, when met with, are very transitory and rapidly disappear.
4. That the presence of abnormal urinary ingredients is not a positive counter-indication for the use of ether.

Added to this is Dr. Weir's own experience as quoted in part below:

"In thirty-four cases where albumin was not found prior to the performance of an operation which excluded the abdominal or genito-urinary regions, in nine there was, after the operation, a trace of albumin to be found which was of a transitory nature, and in twenty-five there was no change whatever, chemically or microscopically, in the urinary secretion.

"In further analyzing my cases, I find that in five patients evidences of a diseased kidney existed prior to the operation, but the albumin was not increased afterward in three of these, but was increased to a slight extent in two, without the development of unpleasant symptoms. In four of the patients, in whom no albumin existed previous to the operation, and in whom it was found in small amount after the operation, there was associated with this symptom a few blood cells, renal epithelium, a few hyaline casts, and an occasional leucocyte. These were also of but short duration.

"The whole outcome of this limited series of observations is not to belittle the risks that patients with much damaged kidneys run in the course of an operation, but rather to direct more clearly our attention to efforts to neutralize these dangers. While I myself do not know of any efficient means of preparing a damaged kidney to undertake the greater work that may be thrown upon it by a febrile action in the system, yet in such instances I do take greater care to avoid the influences of exposure and cold, and am more particular to direct that ether should be so given as to avoid the venous congestions that are so frequently observed during the careless administration of this anæsthetic. I am unwilling in these cases to prolong the abstention from fluids, and, when so forced to do under the irritation of the stomach, resort early and often to large hot-water injections into the rectum, and above all—and this has has been the aim of this discursive paper—I feel that attention should be stringently directed to the most careful carrying out of the antiseptic treatment. And in many instances of this class of patients, rather than run the risk that often occurs from defective drainage (and I believe that drainage is more often carried out by the outside of a tube than by its quickly choked-up lumen, and is therefore many times imperfectly carried out), I prefer to let such wounds be packed with an antiseptic gauze and allowed, where possible, to heal up from the bottom.

"In the few instances that I can recall of marked renal complications following the administration of ether, the operation has been performed in portions of the body where sepsis is most likely to occur and where it is most difficult to guard against it—to wit, the rectum and the mouth."

A single thought may be added, in conclusion, in regard to the mortality from ether. One of the strongest points in favor of ether as an anæsthetic, has been its safety. Not that it may not kill when used carelessly, or even with the greatest care; but, making all due allowance for the possible danger of the anæsthetic state however produced, ether has still justly claimed for it a large measure of safety. One death in 23,204 cases is a very low mortality, and this ratio represents, as accurately as may be by figures alone, the death-rate from ether. It has never been my bad fortune to lose a patient from the effects of ether. And yet this unqualified statement should not be made. Those who advocate the use of ether as an anæsthetic maintain that the deaths due to ether do not, as a rule, occur with the patient on the operating table, but that the pneumonia or bronchitis, or renal disturbance that finally carries the patient off, may be traced back to the anæsthetic. But inasmuch as these same visceral changes are produced by septic influences connected with the operations performed under ether, there will still remain a doubt in the minds of all advocates of ether, as to the relative part played by the ether and the operation in the fatal result. And a profitable study of statistics relating to alleged ether deaths might put the profession in a better position to defend or refute the charge that ether is not so safe an anæsthetic as most surgeons are disposed to believe.

SOCIAL SCIENCE PROBLEMS OF INEBRIETY.

Read before the Social Science Association, Saratoga, N. Y.

BY T. D. CROTHERS, M.D.,

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Notwithstanding all the advances of civilization and intelligence, and the increasing temperance agitation, and effort, the drink evil, or inebriety, is one of the most threatening ominous perils to all social progress and development of to-day.

Some idea of its extent may be obtained from the following statistics. In 1890 over half a million persons were arrested in this country charged with being drunk and disorderly, crazed from the effects of alcohol. Nearly twenty per cent. had committed crime of petty character while under the influence of spirits.

These facts furnish some approximate estimate of the extent of inebriety in this country. It is reasonable to infer that if half a million inebriates have come under police surveillance in one year, at least a third of this number using alcohol to excess, have escaped legal notice.

The statement that there are fully a million persons in this country who are, continuously or at intervals, using alcohol and opium to excess and poisoning themselves is not an extravagant or improbable one.

Of course the mortality from this, both directly and indirectly, is excessive, and the oft repeated assertion of sixty and a hundred thousand deaths a year from alcohol, is after all, only a minimum statement.

Practically this vast army of inebriates are withdrawn from the ranks of active workers and producers, and become burdens and obstacles to all healthy living and progressive development.

Yet literally this army and its excessive fatality would be insignificant compared with the injuries and losses which follow.

These cases are always centers of pauperism both to themselves and family. Often they form centers of criminality, and in all cases cultivate the most unsanitary conditions of life and surroundings. They are actually *foci* from which spring all forms of degenerations, and bad influences, and streams of heredity that are terrible in their power in the next generation. If this drink evil could be limited to the victim, the presence of a million inebriates with a mortality of forty or fifty per cent. would be less terrible.

Literally, every inebriate, if married, pauperizes his family in some degree, entails on his children tides of degeneration, periling their future physically, mentally and morally. If a single man, he cultivates conditions of degeneration which affect all who come in contact with him. He encourages unsanitary and psychological states that are the opposite of healthy growth and living.

If he occupies prominence in society and has influence and money, the insanity of his inebriety antagonizes everything that is rational and sanitary.

The great question to-day is not so much the cure of this army, or the checking of its mortality, but of prevention, from a knowledge and removal of the causes and conditions which favor its growth and development.

Inebriety in a general sense is a progressive march of dissolution, with constant hints of the possibility of halts and checks, where the march can be stayed, and the causes changed.

Scientific observation of the inebriate made two thousand years ago, and the more accurate studies the last quarter of a century all support one broad conclusion: that inebriety is a disease, with a distinct and complex causation; that this disease follows a regular line of march from the beginning through and development on to decline and extinction. Its magnitude, uniformity and fatality, furnish abundant proof of distinct disease and distinct causation, clearly traceable from accurate study. This great drink problem in 1892 is practically this: Thousands of persons in all circles of society from the highest to the lowest, are suffering and dying, and vast tides of misery and loss are following. While all the means and measures to check or prevent this evil are utterly inadequate.

Public attention has been confined entirely to means of prevention and cure, and but little study has been made of the causes and conditions. Theories that were urged a thousand years ago, as to the nature and causes of inebriety, are still pressed with vehement earnestness, by reformers, and accepted as final.

In the meantime the world has gone on, and new realms of facts have been discovered, the supernatural and mysterious have narrowed until these terms often express present ignorance. Moral theories of physical phenomena are survivals of superstition.

The purpose of this paper is to point out some of the conclusions towards which scientific study is approaching concerning the causes and remedies of inebriety.

Heredity is found to be one of the most common causes of all inebriety. Over forty per cent. of all cases which have been studied have inebriate parents or grand-parents. Over twenty per cent. have insane, epileptic and mentally defective ancestors, one or two generations back. The commonly observed fact of the transmission to the next generation, of the form and features of the parents, is followed with equal certainty by the reappearance of their diseases. The form and appearance may vary, but the degeneration never. The organic defects of the brain and nervous system go down to the next generation with absolute certainty. The most casual observation of inebriates in high and low life. fully confirms this: these men are freighted with diseased tendencies and impulses, which burst into activity from the slightest exciting causes. They are incapable of bearing the strains and drains of modern civilization and living healthy natural lives. They are the unfit that are "crowded out" in the race.

The possibility of cure and prevention by the application of scientific measures along this line, promise the grandest results. First of all, marriage should be regulated by law, and determined by the family physician from a knowledge of the ancestral and family diseases. The laws of heredity should be studied and applied, from a scientific standpoint, with the same exactness as the sanitary conditions of the home are arranged.

Polluted and poisonous drinking water, bad, dangerous sleeping rooms, poisonous food, and reckless neglect of common sanitary laws, are considered culpable. How much more infinitely dangerous is the marriage of two persons, with an ancestral history of inebriety, insanity and other brain and nerve defects.

It is here that inebriety, insanity, criminality, and pauperism, are bred and cultivated. We preach prohibition, and urge the pledge and prayer as a remedy, and consent and participate in the marriage of persons whose children must inevitably be inebriates, insane and otherwise defective.

Thus the evil we are trying to remove, is bred and cultivated by ignorance and indifference.

A striking illustration is apparent in the children of drinking parents born during the war, especially where the father used spirits and suffered in the army. As a rule, all these children are mental defects, inebriates, criminals, paupers and insane. The use of alcohol and the mental strain in these exciting days has been reflected to the next generation, and literally these descendants have been switched on to the side-track of profound degeneration, and early death.

Every inebriate and insane asylum, and every prison in the country have inmates where heredity is clearly traceable to the excesses of the parents during the war. Heredity is the great fountain head of inebriety, and the only remedy is the regulation of marriages on a scientific basis.

The question of divorce sinks into insignificance compared with dangerous marriages, and yet the latter are practically unregulated.

Bad, unsanitary living, and bad training are common sources from which inebriety springs.

The child who is brought up in the worst sanitary surroundings and defective ventilation, imperfect heat, clothing and food may not be an inebriate, but he has all the physical conditions to find relief in the narcotic effects of alcohol. Every state and condition of life, that lowers the vital forces, and degenerates and perverts the brain and nervous vigor, predisposes and favors the use of any remedy which will bring relief.

Thus the *over fed* and the *under fed* are being trained for inebriety. The abnormal stimulation which comes from nutrient excesses, and the exhaustion which follows from deficient quality and quantity of food, strongly favor the use of spirits for relief. Thus the glutton and the starved become inebriates.

Many cases are cured by changing the nutrition, building up the body, and regulating the food supply.

Bad training and *no training* are also common causes.

Misdirected education, training children out of their natural sphere in life, education that has no reference to the natural capacity of the child, in most cases unfits him for a healthy life. The brain is perverted, its natural capacities are replaced by capricious desires and eccentricities. It becomes enfeebled and exhausted and the use of alcohol follows naturally from the slightest temptation.

The untrained have little power of resistance to the strains incident to the rapid changes and demands on the brain and nervous system. They also find rest and relief from alcohol. *Over work* and *underwork* are also common causes of inebriety, also exhaustion from diseases, from injuries and many other conditions of life, which weaken and break up the controlling centers of the body.

In these and many other cases, inebriety is simply evidence of brain exhaustion and brain defect.

This is apparent from the increase of inebriety which follows wars, famines, disasters, commercial depressions, waves of public sorrow, and events that profoundly impress the public mind.

Inebriety follows closely the movements of society and commerce and the revolutions which spring from new inventions and changes of life and living.

Every advance in the study of the inebriate brings into view new ranges of causes and conditions, which can be remedied, and suggests means and methods of prevention, that are as exact as the march of the seasons.

If the inquiry is turned to the present legal methods of treating inebriety we are confronted by some of the most startling facts.

Of the half a million persons who were arrested last year for inebriety, not one per cent. were benefited or helped. Over ninety per cent. were made worse and more positive inebriates by this means. The station houses and jails are actually recruiting stations and the armies of inebriates who are forced into them, are formed into legions of incurables which never desert or leave the ranks. Physically, the short imprisonment of the inebriate simply removes him from spirits, and leaves him less capable of living a temperate life, Mentally, he has lost a certain self-respect and pride of character essential for recovery.

The first legal punishment of inebriates is followed by a species of fatality, seen in a repetition of the same offense ever after. This fact is so apparent, that these cases are called "repeaters" in the courts, and the number of sentences to the same man often extends to hundreds. In one thousand cases confined at Blackwell's Island, New York, nine hundred and thirty-five had been sentenced for the same offense, drunkenness, from one to twenty-eight times. The first sentence was a regular switch point from which the victim was precipitated lower and lower, and became more incapacitated for temperate living.

The system of fines is equally ruinous, because it falls most heavily on the family, making it more difficult for them to sustain themselves, increasing the perils of pauperism to both the victim and those who are dependent on him for support.

It may be said, and the statement is sustained by many facts, that the legal treatment of inebriety by the lower courts by fines and imprisonment are equally as fatal and dangerous as the saloon where spirits are sold. The saloon and the police court, are literally the school and college for the training and graduation of an army of incurable inebriates, that peril every sanitary interest of the country.

The fault is not in the courts and its administration of law, but in the law, and public opinion which urges that all inebriates should be treated as wilful criminals, and arrested and punished the same as all criminals.

Thus year after year this terrible farce of prevention of inebriety by fines and short imprisonments goes on, and the incurability of the poor victims increases; crime is increased, pauperism is increased, the most dangerous sanitary conditions are fostered, and the burdens of the producers and taxpayers enlarged.

These are facts supported by abundant testimony.

A Chinese law enacted a thousand years ago contains a flash of truth. When a criminal comes before the courts, careful inquiry is made into his ancestry. If they are found to have any of the traits common to the prisoner, he is killed and they are punished. His death ends all further possibility of transmitted crime, and their punishment and recorded history puts a check to all further propagation of the evil.

If this terrible error of treatment would end with the victim it would be less aggravated, but it cultivates and entails on the surroundings and future, waves of loss and sorrow that are beyond estimate.

While the law is trying to check inebriety by punishment, and the church by conversion, and the moralists by the pledge, science is solving the problem, and pointing out other and clearer methods of cure and prevention.

Already great outline facts are coming up on the horizon, and the dawn of a new era is at hand. Not far away inebriety will be regarded the same as smallpox, and the victim forced to go into quarantine, and be treated until he recovers. Public sentiment will realize that every inebriate is not only diseased but dangerous to society and himself, and will demand that he come under legal restriction and be placed in the best conditions for recovery. The victim will realize that society will not tolerate his presence, or permit him to have personal liberty in this condition, and make an effort to secure aid and help before extreme stages are reached.

Thus the poor man on the street, and the rich man or his son, will come under legal control at the beginning, and be forced into states of healthy living. The one will be saved from becoming a prey on society, and a burden to the tax-payer and producer, and the other from destroying himself and injuring the society he moves in, and leaving a tide of misery and sorrow, that will continue long after.

Take away the personal liberty of the inebriate, or any one who uses spirits to excess, declare him incapable and irresponsible, and a death blow is struck at all centers of pauperism, criminality, and the saloon. Make the saloon-keeper and his property responsible for all the injuries that follow from the sale of spirits, and tax him to support asylums for the inebriate, and the saloon will disappear in obedience to a higher law than any prohibition sentiment.

All inebriates should be put under treatment in workhouse hospitals, built from the license fund, and supported by the labor of its inmates.

Such hospitals should be military training schools, where every surrounding and condition of life can be regulated. Where medical, hygienic, educational, industrial treatment, and training, can be applied to restore the man to health again. His time of commitment should depend on his condition, and be followed by parole and test as to his final cure. Here each case can be the subject of special study, and special remedies to make recovery permanent. The incurables can be housed and made self-supporting, and the curables can be made self-supporting while undergoing treatment. A certain number of cases can pay for treatment in part or entire, but in all cases employment should be a part of the treatment. The practical character of such military training hospitals is established on the experience of every prison and asylum in the land. Such hospitals should combine the best features of the home, hospital, asylum and penitentiary, with special adaptations for this class.

The great principle is to quarantine the victim until he is cured, and prevent the spread of the disease, and to study the condition and causes, and from this be able to apply the remedies and methods of prevention. Another great principle is to recognize that inebriety is the result of physical conditions which can be seen and understood; also to recognize that the theory so widely accepted, which explains the phenomena of inebriety as a moral evil is contradicted by all the facts.

If this moral theory is true it would be the strongest evidence of the failure of civilization and Christianity.

To-day the drink problem appeals to us as a terrible fact, not as a theory, and its causes and methods of cure and prevention are the most important questions of the hour.

Some of the outline facts which scientific study is rapidly building up, and supporting by constantly increasing evidence, may be grouped as follows:

1. Inebriety is more widely extended in this country, and of greater fatality, than all other diseases. This fact is not practically recognized because the theories of its origin are still involved in superstition.

2. No one cause or disease so greatly perils the social sanitary and physical conditions of life and living, as inebriety. No one cause has greater influence in its production, than heredity.

3. The degeneration of brain and nerves, that always follows the excess of the use of alcohol, goes down to the next generation with absolute certainty, appearing in some form or other.

4. The remedy is to stop this polluted stream at *the fountain*; *to prevent the marriage of inebriates*; to make marriage a public act, in which the welfare of society and civilization are concerned; to prevent the transmission of disease of any kind from heredity; to make it a criminal act to marry where both parties are defective.

5. To study the unsanitary conditions of life and living which predispose to inebriety; to realize that certain lines of conduct and failure to live properly are dangerous and fatal; that education may be more dangerous than ignorance if applied wrongly; to realize that inebriety is always evidence of brain failure and defect with exhaustion, which can be seen, and prevented by physical means and appliances.

6. The question of remedies begins first from actual physical means and conditions which control and influence other physical states: such as the removal of causes, and placing the man in the best possible state to recovery.

7. The present legal treatment of inebriety by fines and imprisonments fails most disastrously. The degeneration from which inebriates suffer are increased, and the victim is both literally and theoretically trained to worse and more incurable conditions. The lower courts, by indiscriminate fines and imprisonment, are doing irreparable injury under the guise of curing and preventing this disorder.

8. All scientific study points to the only rational remedy, which comes from recognition of the disease of the inebriate, and the need of physical restraint and treatment in work house hospitals. It recognizes that special quarantines and special treatment are essential for restoration and cure.

These hospitals should be self-supporting from the work of the inmates, and the money they are able to pay for their care and treatment.

Finally, the social science problem of this great drink evil for 1892, is not touched by prohibition, moral suasion, the pledge or the prayer. These are merely agitations, long roll beats, rousing public interest. The real evil is farther back, and yet nearer to all our relations of life. In closer contact with our homes, and the almost infinite range of causes, that enter into the success or failure of life.

To-day, over half a million inebriates are suffering and dying in this country, unknown and unrecognized practically. The number is increasing, and the losses from them are increasing. This army of inebriates are whirled along on their last march to the valley of death, and the mouth of a hell that stretches on into the future, crippling the generation to come. They may have a flashing instinct that some one has blundered, but there is no time for question or reply. On, on, obeying orders not heard by the coarser senses, and following lines of march that lead to extinction.

The scientists looking beyond the mass of clouds and darkness which surround this subject, find that the inebriate is no exception to the vast armies of diseased, and his restoration and cure are along the same physical lines of cause and effect.

Insanity has been studied over a century as a disease and yet only a few facts have been established, and preparation made for more exact study. Inebriety, an infinitely more complex disease, is unknown, practically. Only a few pioneers are approaching it from the physical side, and yet the facts are so numerous and startling, and the possibility of prevention and cure so positive, that the enthusiasm *of the student increases at each step. An enthusiasm* and confidence that behind all this mystery of inebriety will be found a majestic order of forces, springing from unknown causes, moving in unknown orbits, and about unknown centers; also, not far away, all this confusion of theory and practice will disappear, and inebriety will be treated and cured as other diseases are.

REPORT OF THE SURGICAL CLINICS,

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College,

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(*Continued from page 319.*)

November 8, 1890.

FRACTURE OF THE BASE OF THE SKULL.

This man, æt. 27, was hurt and admitted to the hospital on October 16, 1890. He is a brakeman on the Pan-Handle Railroad. While riding on top a box car a stone came rolling down the side of the hill near the Point Bridge and struck him on the forehead above the left eye, causing insensibility of the patient to some extent, bleeding at the nose and at the left ear and ecchymosis under the sclerotic coat of the left eye. When you have a patient that has received a blow on the vault of the cranium sufficient to cause a fracture, although you may not be able to find one, and there is a bloody watery discharge from the ear, ecchymosis of the eye, you have a right to suspect a fracture at the base of the skull.

Fractures of the *base* of the skull may be caused in three different ways, viz.: 1. By the extension of the fracture from the vault to the base of the skull. 2. By "contre-coup" where from a fall or blow on the vertex the fracture is produced in a place diametrically opposite to that struck. This sort of fracture is sometimes disputed, but post-mortems show that it does occur. 3. By a shock being received through the spinal column against the condyles of the base of the skull by a fall from a height on the feet or hips.

Fractures involving the anterior fossæ of the base of the skull will cause the orbital plates to be broken or fissured. Hæmorrhage into the orbit and areolar tissue about the eye, known as ecchymosis, is commonly considered as evidence of a fracture of the anterior fossa. This form of ecchymosis must, however, be distinguished from the subconjunctival and subcutaneous ecchymosis, which constitutes the ordinary "black eye," by the fact that it is unaccompanied by contusion of the superficial structures. Fracture in the middle fossa involves the petrous portion of the temporal bone.

Hæmorrhage from the ears and a discharge of thin watery fluid from the ear or nose are considered important signs in this form of fracture. Fracture in the posterior fossa usually involves the petrous portion of the temporal bone, and the important signs are the same as in fracture of the middle fossa. Fractures of the base of the skull are not necessarily fatal, which is proven by examples we see in museums. The danger as to recovery depends not so much on the fracture as on the amount of injury done to the cranial contents and the subsequent inflammation resulting therefrom. Patients may have bleeding from the ear and not have any fracture, the bleeding being caused by rupture of the membrani tympani. This may be differentiated from fracture by the reason that in the latter the hæmorrhage is profuse and long-continued. The other symptom, which is the more pathognomonic, is the discharge of the watery fluid from the ear. It sometimes continues to flow for several days, and as much as a quart has been known to escape. This discharge is, in most cases, due to the escape of the cerebro-spinal fluid; it is rapidly renewed after its escape. This man had a narrow escape, as such injuries are very liable to result in inflammation of the brain. The treatment in olden times in these cases consisted in the abstraction of blood, which procedure is, no doubt, valuable; but by free purgation we derive just as much good. In this case, we administered the pulvus jalapæ compositus to produce purgation, which was followed by small doses of calomel, and repeated until it produced a slight touching of the gums. We applied an ice cap to his head for its local antiphlogistic effects. And in addition to the medicinal treatment we enjoined rest and quiet in a darkened room, and the patient not to be talked to; this being as important as the medicines. He also had some bromide of potassium to produce sleep. He is feeling well now, has some appetite, and all he needs now is some tonic treatment. The following will be given him, viz.:

℞—Potass iodide, 3 drachms.
Ext. Ergotæ fl., 4 drachms.
Tr. cinchonæ co. ad., q.s., 3 ounces.
Dose—A teaspoonful.

SUPPOSED FRACTURE OF THE NECK OF THE FEMUR.

I next show you this colored man, aged 17, who last December, while working about a building, fell sixty feet, striking on his right side and buttock. He was not able to walk for three months thereafter; what his treatment was we do not know. He was sent here for treatment for disease of the hip-joint. I have not made out a positive diagnosis yet, and if any of you can help me I will be much obliged to you. When standing erect, you see, the right heel is about an inch from the floor. By measuring, we find the right leg to be 34½ inches from the anterior superior spinous process of the ilium to the inner malleolus, and the left leg 36 inches, showing a shortening of one and a half inches in the injured limb. This is one of the most difficult cases of diagnosis that I have ever encountered. If it is a dislocation at all, it is one on the dorsum ilii; there are, as you know, four dislocations of the head of the femur. It might be a fracture of the neck of the femur, because in this there is also shortening of the limb. We are deprived of crepitus on account of the long time since the injury. There is very little motion at the hip-joint, nearly complete anchylosis. Thus you see we have some symptoms that point to a fracture, and some to a dislocation. My own opinion is that it has been a fracture of the cervix femoris. The immobility being caused by the abundant callus thrown out. By applying "Nelaton's test line," which is one drawn from the anterior superior spinous process to the tuber ischii, we find that the trochanter major is one and one-half inches above this line, while in the normal limb this line crosses the tip of it. To diagnose these cases, sometimes a long needle is passed into the acetabulum to ascertain whether or not the head of the femur is there present. In diagnosing these cases hip-joint disease must be taken into consideration; but the history of this case excludes that. In making a differential diagnosis between fracture of the neck of the femur, and dislocation on the dorsum of the ilium, the following will be found to be valuable:

FRACTURE.

1. Frequent in advanced life.
2. Often caused by fall on trochanter major.
3. May have crepitus.
4. Preternatural mobility.
5. Limb rotated outward.

DISLOCATION.

1. Rare in advanced life.
2. Never caused by fall on trochanter major.
3. No crepitus.
4. Preternatural immobility.
5. Limb rotated inward.

November 15, 1890.

ACUTE SYNOVITIS.

Gentlemen: Here is a man, who, last Thursday, in trying to jump from a moving train, fell, causing several slight scalp wounds and an injury to his right knee. It was thought at the time that it was a fracture of the patella. But we find such is not the case. We now find the joint full of a serous fluid, the result of an acute synovitis, which is a serious affection. You will notice on the dissection of the cadaver, how extensive the synovial sac of the knee is. It is said by some one to be as large as the pleura. Here we have severe aching pain in the joint, increased by motion, great swelling, accelerated pulse and all the symptoms of acute inflammation. If this inflammation is arrested at once, it is a matter of not much moment, but if allowed to go on to suppuration, it may endanger the life of the patient as well as the usefulness of the limb. Rest and the application of an ice bag will often arrest the inflammation in its early stages. This limb will be put upon a double inclined plane, and a bag of pounded ice applied. Perfect rest of the joint is the first thing to be enforced; this will be attained by putting the limb in a splint. The application of fifteen or twenty leeches around the joint, would be a very proper course of treatment, followed by the application of an ice-bag, but as we do not have the leeches we cannot do that. I suppose to do something better than the application of leeches, an operation that has done more benefit and to more people than any other operation, that is plebotomy, venesection or bleeding. Fifty years ago it was a custom for healthy people to be bled in the spring of the year, and it was thought to be necessary for the maintenance of their health so to do. In acute inflammation of serous membranes, I still regard it a very useful remedy. The elder Prof. Gross, of Philadelphia, said at a meeting of the American Medical Association once, that it was a lost art, and he inquired of the physicians present, about five hundred in number, if any one of them had a thumb lancet in his possession, and not one of them answered that he had. I have no doubt that before you are as old as I am this method will be revived again. The operation consists in tying a handkerchief around the arm above the elbow, so as to arrest the venous but not the arterial circulation, having the patient in a sitting posture, and grasping a stick or broom handle to steady the limb, which is held out in a semi-supine position. I will not cut the vein entirely off. I will make the incision, obliquely, into the median cephalic vein, being careful not to cut too deep, because in so doing I might cause a varicose aneurism. Bleeding to the point of syncope is thought proper when an inflammation is serious, but as it is not necessary so to do in this case and the patient objects to it, a smaller quantity will suffice. I believe within the next ten years every intelligent physician will have a thumb lancet in easy access.

Inflammation of the synovial membrane bears about the same liability to the loss of a limb as inflammation of the pleura does to the liability of loss of life. Now as we have bled him sufficiently I take off the handkerchief and the bleeding stops. We will dress the wound with bichloride gauze and a roller bandage. The ancients believed that when the blood would assume a buffy coat on its surface, when left standing for some time, it was proof that it had answered a good purpose on account of having too much fibrin in the blood. In addition to the bleeding we will give him a cathartic of an ounce of sulphate of magnesia daily, and if he has pain, morphia a quarter of a grain. All the treatment that the scalp wounds need is the cleansing with soap and water, and anointed with sweet oil or vaseline.

AMPUTATION OF A FINGER.

This man, two weeks ago while chopping wood, was driving a wedge with an ax, when the ax slipped off the wedge, inflicting a compound dislocation and injury extending into the metacarpo-phalangeal joint of the index finger of left hand. The head of the metacarpal bone was cut off. I propose to amputate the finger. Sometimes in amputation you will be at a loss where to get sound tissue enough for the flap, so it is somewhat in this instance. I will make the flap from the inside of the forefinger.

Having now severed the finger, I remove all the unhealthy tissue with a Volkmann's spoon. I do not hope to get union by first intention on account of the condition of the tissues in the wound, but it will heal by granulation.

INJURY TO THE ELBOW JOINT.

This man received an injury to his elbow joint, November 6, while in a railroad wreck at the West Newton, Pa. Fractures of the elbow are the most annoying that a surgeon is called to. In examining an elbow, place a finger on each condyle of the humerus, then find the point of the olecranon process, which in the normal position will be midway between the condyles. Then by flexion, extension and rotation the nature of the injury can be made out.

By flexion and extension you can determine a fracture of the internal condyle; and by pronation and supination a fracture of the external condyle. By remembering this you will be able to differentiate between these two forms of fracture. There is no crepitus here now on account of the time that has elapsed since the injury. An important point is never to forget passive motion. Hamilton recommended that passive motion should be employed from the seventh to the tenth day after the fracture in children.

I believe that no passive motion should be employed until some union of the fracture has taken place, and until it does not produce pain to the patient, which is usually three or four weeks after the injury.

DISLOCATION OF THE HIP.

This man, an Italian, is the person for whom I reduced a dislocation of the head of the femur on the the dorsum ilii, yesterday, in the presence of a number of you. While pushing a truck and in a stooping posture, another truck came up behind and struck him on the buttocks, dislocating the right hip joint. You remember the patient was anæsthetized, and after several fruitless attempts to reduce it by flexion, abduction and rotation of the thigh, it was afterwards reduced by extension and counter-extension. The extension must not be made in the line of the axis of the body, for in so doing you will only pull on the ilio-femoral or "Y" ligament; but make the extension in a direction across the thigh of the other leg. You see the legs are parallel now and both everted, while before the reduction yesterday, there was shortening of the affected limb, inversion, alteration in the shape of the hip and the axis of the thigh crossing the other at its lower third.

November 22, 1890.

Gentlemen: I want to show you, this morning, the patient for whom I reduced a dislocation of the hip a week ago. You notice he walks a little lame. You remember we reduced it by extension and counter-extension after several futile attempts to reduce it by manipulation. Since the days of Hippocrates, a controversy has been going on among surgeons as to the best method of reducing a dislocation of the hip. The methods, by manipulation and extension and counter-extension, are the principal ones employed.

Within the last fifty years the process by manipulation has about superceded the process by extension and counter-extension. This was the seventh case that I have had where manipulation has failed and extension and counter-extension succeeded readily. I have resolved hereafter always to try extension and counter-extension first, because if I do *fail by it*, it will do no harm to the joint, while the method by manipulation does injure the capsule to some extent and may even produce a fracture of the neck of the femur. So I would advise you to employ extension and counter-extension, with your foot in the perineum and making traction with your hands, having the patient profoundly anæsthetized. The rent in the capsule is usually at the lower part, and hence by extension and counter-extension you reduce the dislocation by way of the rent in the capsule. The lameness is due to a slight inflammation of the capsule and ligaments surrounding the joint; but this will soon subside, and he will be discharged from the hospital in a very few days. I only show him to-day that you may see his condition and follow up the case.

FRACTURE OF THE CLAVICLE.

I am very glad to show you this case, because it relates to what I am lecturing on now, didactically, the subject of fractures.

This man while chopping down trees, day before yesterday, was struck by a limb of the tree, sustaining a scalp wound and a lacerated wound of the skin of the cheek. He was thrown to the ground, sustaining an injury to his left shoulder. He complains of pain when the left shoulder is moved; he can, however, place the hand and arm of the injured shoulder in the position employed in the Dugas' test, showing that no dislocation of the shoulder can be present

Passing my hand along the clavicle, I find a false point of motion and the usual signs of a fracture of the clavicle, which I want to speak to you about today. You will please notice the position of the shoulder, the left or injured one is lower than the right. Let us now follow the course of fractures from their causes; the exciting causes are external violence and muscular action. External violence may act directly or indirectly. This is an example of indirect violence, which we learn from the history of the accident. The symptoms of fractures are divided into subjective and objective. The subjective are, as we find them in this case: pain and history of the accident. The objective signs are deformity, the left shoulder droops and hangs lower than the right, and in measuring from the sternal notch to the acromion process, on the injured side, I find that it measures 6½ inches and on the uninjured side, 7½ inches. Beside these signs, we have pain, loss of function, false point of motion and crepitus.

The clavicle is usually broken near the outer end of the middle third, the displacement consisting mainly of the outer fragment, which is drawn downwards by the weight of the arm, and inwards by the action of the muscles attached to the humerus and scapula, viz.: the pectoralis major, the latissimus dorsi, the rhomboidei, trapezius, levator anguli scapulæ, and pectoralis minor.

Next to the radius, the clavicle is more frequently fractured than any other bone of the body. Fracture of this bone occurs very frequently in children, from falling from their carriages or high chairs. In adults the displacement of the outer fragment of the bones is downwards, backward and inwards. The downward displacement is caused by the weight of the arm, the backward and inward by the action of the muscles attached to the scapula. The tilting up of the inner fragment is caused of the action of the sterno-cleido-mastoid muscle. The line of treatment, is to restore the deformity, which is done by relaxing the sterno-cleido-mastoid muscle, by preventing the weight of the arm from dragging down the outer fragment and by fixing the scapula. All this can be accomplished by position alone, carrying the shoulder upwards, outwards and backwards.

Probably the best treatment is to put the patient on his back, on a hard mattress, and the arm flexed and carried across the chest so that the hand rests on the sound shoulder.

By this simple method, the deformity in most cases can be completely reduced, but it is seldom that persons will submit to this plan of treatment. Society ladies, however, will usually submit to any kind of treatment that will restore their good forms; because the deformity resulting from a badly united clavicle would sadly impair their forms for low cut dresses. Patients are very liable to get well with some deformity even when the best of treatment is employed, but happily it does not interfere with the use of the arm. Dr. Moore, of Rochester, suggests a dressing which is a very good one; it consists of a piece of muslin or canton-flannel about three yards long and ten inches wide, applying the middle of the bandage to the point of the elbow, then bringing the inner extremity up over the fractured clavicle, across the back, through the opposite axilla and up over the sound shoulder; the other extremity through the injured axilla, across the back, over the opposite shoulder, through the axilla and fastened to the other extremity.

I think this a very excellent bandage and it can be made of a scarf or shawl. In addition to the bandage the hand is carried in a sling. Moyer's method consists in taking a square piece of muslin, fold it diagonally, passing it around the body so as to catch the elbow, the arm being in the "Velpeau position," and tying on the back, the two hanging corners of the muslin are carried up inside the arm and tied around the neck. This method is convenient for children. Mr. Goslin has adopted a different method of the last named bandage; he puts the arm right in the fold; tying it as in the former, behind, and the other two ends tied around the neck; the bandage applied in this manner is not easily displaced.

Velpeau's bandage is a common one. The fracture is first reduced, the hand placed on the sound shoulder, and a compress placed between the side of the chest and injured arm. The manner of application is as follows: the initial extremity is placed in the axilla of the sound side, carried over the back, over the injured clavicle down on the front and outside of the arm, under the point of the elbow and over the chest to the sound axilla. Make two similar turns to fix it; then pass circular around the chest advancing up the arm towards the clavicle; then make a turn around the body. This bandage will not be retained very long unless it is pinned, or starch or silica is rubbed into it. Formerly it was the practice to put on a posterior figure of eight bandage, but it is very uncomfortable to the patient and they rarely submit to it. Experience has proved that it is not a good bandage. Another plan is to put a board or yoke on the back and draw the shoulder back to it; this would do very well if it could be borne by the patient

Another method is the three bandages of Desault. The first bandage is to hold a pad in the axilla, which should be about 2 inches thick, and reaching from the axilla to the elbow, which acts as a fulcrum, and using the humerus as a lever, the fragment is drawn outwards. The second bandage acts as the force to the humerus over its fulcrum, the pad, and reduces the inward displacement and brings the fragment outwards. The third bandage is to lift the shoulder upwards. The initial end of the roller is placed in the sound axilla, as in the Velpeau bandage, passed across the breast to the seat of fracture, where there must be placed a compress, over this and down the back of the arm to the elbow; thence upward to the sound axilla, through it, over the back, over the fracture, down the front of the arm to the elbow, and then to the back; then to the sound axilla; through this and over the chest to the fractured clavicle. The third bandage of Desault forms two triangles; one is in front and the other is behind the chest. It is quite complicated, and liable to become disarranged unless pinned at every crossing. Another favorite dressing, and one that is very effective, is that of Dr. A. Sayres, of New York. It consists of adhesive plaster 3 inches wide. One strip is applied by forming a loop around the arm of the affected side, well up the axilla; then, having the arm in position, draw the strip around the body over the back, draw it tightly and secure it to the chest, thus drawing the outer fragment outwards. A second strip is placed under the elbow and both ends fastened over the opposite shoulder drawing it backwards, at the same time supporting the forearm. When there is difficulty in holding the fragments in apposition there is no method so effective as this, except the position on the back.

ABSCESS OF THE THIGH.

This man sustained a fracture of the femur two years ago. Some time after its union, an abscess occurred at the place of fracture, and some pieces of bone came out, going to show that there was some disease of the bone. By measuring, I find the injured limb 1¾ inch shorter than the other. I see scars where abscesses have been. At present the outer and posterior surface has the appearance of an abscess. I propose to open this and examine the bone with a probe, and if any diseased bone or loose pieces of bone are present, I will remove them. I will open the abscess first, making a free incision. I suppose there is tubercular matter in this, and upon a microscopical examination we might find the bacilli of tuberculosis. There is a cloaca here, and when they are present, they generally lead down to diseased bone. I pass a probe and find a roughened condition of the bone, but not diseased portions. I will put in a drainage tube through the limb, and thus hope to cure the sinuses.

This is what is called through drainage, and it is employed in compound fractures. It will be thoroughly washed out with antiseptic fluid, also scraped out with a Volkmann's spoon. The large incision on the outer side of the leg will be partly sewed up with catgut sutures. It will be put up in the usual antiseptic dressings, and I will direct that it be washed out every day, and we thus hope to effect a cure.

November 29, 1890.

Gentlemen: I propose to make some remarks about fractures, as that is the subject I am lecturing on now. Fractures of the femur may be divided into three classes, viz.: 1, those of the upper extremity may be subdivided into intra-capsular and extra-capsular. This was the classification of Sir Astley Cooper, and it is a very good one. A fracture within the capsular ligament is usually considered by surgeons as one that does not unite. There may be some rare exceptions. The causes of non-union of intra-capsular fractures are on account of the deficient vascular supply to the fragment, the difficulty in keeping the fragments in apposition, and the presence of the synovial fluid at seat of fracture.

Fracture of the neck of the femur occurs usually in old people, 60 years or more of age, and most frequently in women. The cause of fractures being more frequent in old persons is usually said to be an excess of earthy matter in the bones. This theory is now about abandoned, because on examination of the bones of old persons it is found that the compact substance has become thinner than normal, and the cells in the spongy substance larger, hence there is really less bone, and consequently more fragile. In old people a very trivial cause may produce a fracture, such as slipping from a curbstone, tripping over a loose piece of carpet, an unexpected step, or even turning in bed. We are never able to tell exactly whether a fracture is intra-capsular or not. Extra-capsular fracture of the neck of the femur occurs more frequently in younger persons, caused by falls on the trochanter or other direct violence. This form of fracture unites well, the amount of callus being very large. The shortening in these cases of intra-capsular fracture, determined by measurement from the anterior superior spinous processes to the inner malleoli, is usually small at first (about ½ inch), and subsequently increased to 1½ or 2 *inches*, by the giving way of the ligaments and the capsule. When this gradual shortening takes place, you may be certain that it is intra-capsular. In extra-capsular fracture, the shortening is as much at first as afterwards. Both these varieties may be impacted fractures, the neck being driven into the head or into the spongy portion of the trochanter major.

It is very important that you do not break up the impaction by your manipulation, because the union would not take place near so readily, or probably never.

(*To be Continued.*)

CASES TREATED BY METHYL-VIOLET.

Reported to the Kansas City Academy of Medicine, January 2, 1892.

BY FLAVEL B. TIFFANY, M.D.,
PROFESSOR OF OPHTHALMOLOGY, UNIVERSITY MEDICAL COLLEGE, KANSAS CITY, MO.

Case 1.—Phlyctenular keratitis or papillary corneitis as treated by methyl-violet. Dosia Huston, age 5 years, was brought for treatment December 11, 1891. History as obtained from the father: "Child has had very sore eyes for over a year; has not been able to open her eyes nor bear any light for several months. Her face has been sore and covered with scabs for a long time. The eyes constantly water, and tears seem to scald the face. She never wants to go in the light, but begs always to stay in the house where it is dark; she lies much of the time with her face on the floor with her sunbonnet on, or face buried in a pillow or on her mother's lap. If up, she goes with hands over the eyes."

The face of the child when brought was covered with a purulent mass of scabs, and the child would scream with pain when any light was allowed to come to her eyes. She insisted on having a sunbonnet drawn closely over the face, shading the eyes. The eyes were firmly closed, and upon opening the lids I found the eyeballs turned up under the lids away from the light, and I was obliged to use lid retractors in order to get a view of the corneæ. When I was able to see them, I found numerous papules upon the cornea. There was also pemphigus or watery blisters of the face, scalp and feet, as well as other parts of the body. I had a photograph taken of the child under chloroform, which shows a mass of scabs over the face. (The etching does not show as well as the photograph.) I commenced the use of methyl-violet in fluid form, 1 to 1,000, dropped into the eyes, and on gauze as a mask over the face. The mask was left on until the following day, when the condition of the face was already improved, and the child was able to open the left eye. On account of the cloth adhering to the sore surface, pomade of the same strength of methyl-violet was substituted, and also put into the eyes. On the third or fourth day the child began to pull the bandage off the eyes, and look about with both eyes open, a thing she had not been able to do for several months. In less than a week from the time the methyl-violet was first used, both eyes would tolerate light, and we had little trouble in getting a good view of the corneæ, which were rapidly clearing. On the ninth day a second photograph was taken, which shows the face clear from sores and both eyes open, although, as the photograph indicates, when in bright light, as was necessary to get a good impression, there was some photophobia. In a shaded room she was able to hold the eyes wide open. In less than two weeks the patient was discharged cured. In this case I purposely avoided using any other medicaments, thus relying wholly upon the methyl-violet, wishing to give it a fair test. Now I do not claim that a cure in this case might not have been brought about by other remedies; but I do not believe it could have been accomplished in as short a time and with the apparent permanency, as up to the present writing there has been no recurrence of the disease (March 5, 1892). The eruption of the skin on other parts of the body was also treated by the same pomade of methyl-violet, and disappeared at about the same time as the corneal trouble. The child being evidently of a strumous cachexia, I gave her syrup of the iodide of iron, which I have no doubt assisted in the speedy cure.

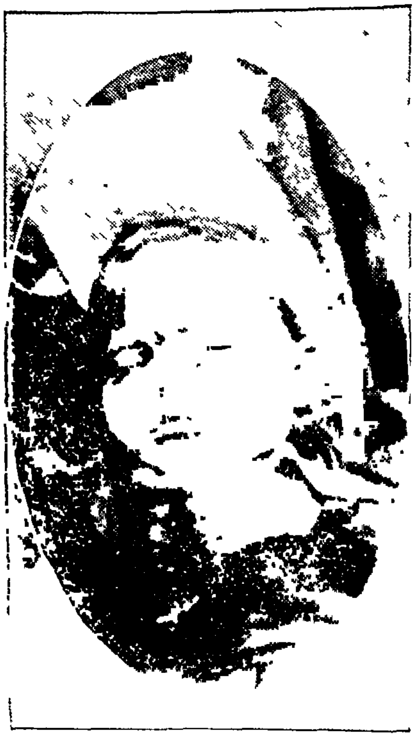
FIGURE 1

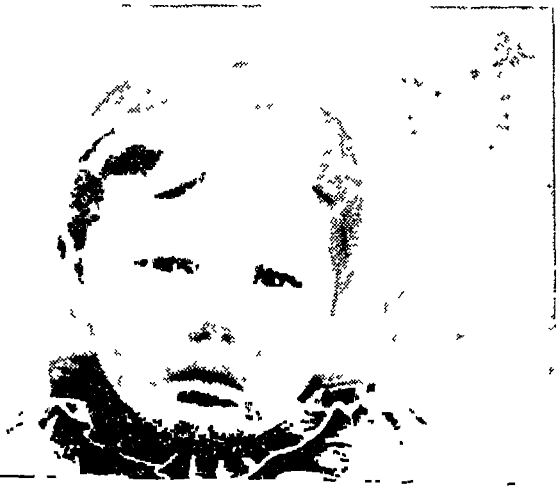
FIGURE 2

Case 2.—Gust Nordland, age 24 years, farmer, Swede, came December 16, 1891, with the following history: "Eight years ago I was struck over the right eye by a brush flying back from a man in front of me. We were in a boat and in the act of landing. I was holding the oars and could not protect myself. The old man in front caught the brush on his arm, and as he pulled away the brush flew back and struck my right eye. This immediately produced partial blindness, so I could not read with the eye, and the sight grew more dim each year. There was pain in the eye at the time, but it did not last long. No pain was felt afterwards until recently; now the eye aches all the time; last Sunday the pain was very severe." Sight has been gone for four years. Vision of right eye 0; vision of left eye $\frac{20}{20}$. I find a tumor of the ball just back of the cornea at the superior and outer part, near the insertion of the oblique muscles, as

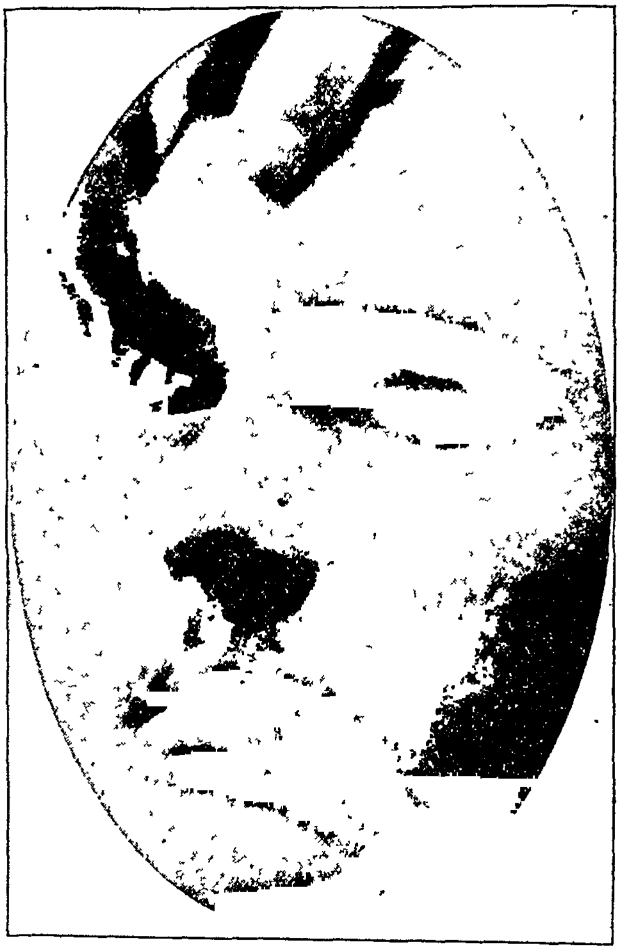
FIGURE 3

large as a Lima bean. (Fig. 3.) The sclera over this region is thin, showing the choroid through. The growth or tumor, he says, has only been coming two months, and is now growing fast, increasing every day—probably sarcoma. December 17, with hypodermic syringe I injected the tumor with methyl-violet solution, 1 to 1,000, gtts. v. There was a watery fluid escaped under the conjunctiva, producing some chemosis. December 18, tumor reduced and pain gone. December 19, no pain and less tension. December 20, no pain, methyl-violet 1 to 1,000 dropped in the eye once a day; this treatment was continued for one week from the time of first injection. Then a fresh solution of 1 to 1,000, gtts. v, was injected into the vitreous chamber. The injection created some soreness of the ball, but no pain followed either injection. Care was taken that the needle used for the injection was sharp, the instrument aseptic and the fluid fresh. December 26, methyl-violet pomade was applied instead of fluid. Some pain followed this application. The fluid was resumed, 1 to 3 gtts. dropped into the eye each day. Since then up to the present date there has been no pain or soreness; the eye feels comfortable, and the patient says it does not seem so large under the lid; tension is reduced to the normal. The ciliary injection, which was quite prominent when first examined, is nearly gone, and the tumor is certainly one-third smaller than at the first examination. At the last examination I noticed a slight retinal reflex of this eye, showing that the turbid vitreous was clearing; and the patient mentioned that he was now able to discern objects passed before the eye, something he had not been able to do before for several years. The appended letter shows the permanency of the good effect of the treatment:

> LINDSBURY, KAN., January 27, 1892.
>
> DR. F. B. TIFFANY, KANSAS CITY, MO.
>
> *Dear Sir:*—As the tumor of my eye is about the same as it was when I left Kansas City, I thought about writing to you for advice. Do you think it would be advisable to inject any more medicine? Do you think it would reduce the tumor by injecting any more? If so, please let me know by return mail, because I can go down with a carload of cattle that is going to be shipped from this place next week, so it will cost me nothing to go down if I know it in time. I have had no pain whatever in the eye since I came home.
>
> Respectfully yours, GUST NORDLAND.

The first injection was made the 17th of December, 1891, and the second the 23d of December, 1891.

As the eye was quiet and evidently improving, I have not yet made the third injection, and up to the present writing (March 5) the eye still continues to improve.

Case 3.—M. Q., age 6 years, Quick City, Mo., came August 6, 1891. History as obtained from the father: About four weeks ago, the child stuck a table fork in his left eye, at the lower and inner third of the eye (ciliary margin of the iris).

Diagnosis.—Luxation and traumatic cataract of the lens. Vision, count fingers. This patient was brought during my absence from the city. My assistant, Dr. Merriman, made the above diagnosis. The parents then took the child to another oculist, who diagnosed suppuration of globe, and advised immediate removal of the eyeball. Some days later the child was brought back to my office, when an examination revealed a bright fleshy-looking body rising from the inferior ciliary region, with blood-vessels unting over it. The body was as large as a Lima bean. I diagnosed glioma, and advised enucleation. But the parents wished me to save the ball, if possible without damage to the other eye. I insisted that there was danger of sympathetic ophthalmia of the fellow-eye, but no immediate danger. Not getting their consent to operate, I commenced the use of methyl-violet, 1 to 1,000, dropped into the eye; this relieved pain and soreness of the eye. I prescribed a bottle of methyl-violet, to be taken home with them (in the country) and its use continued. The child has been back to me several times since, and there has been no pain or soreness since the use of methyl-violet, and at the last visit the tumor seemed to be smaller.

Since methyl-violet has such an extraordinary penetrability, and causes little or no irritability if used in the strength of 1 to 1,000, and has for its predilection the nuclei of cells and bacilli, it seems especially indicated in deep-seated affections of the eye, especially those of the uveal tract.

A PROPER SUBJECT FOR PUBLIC HEALTH.

BY E. CHENERY, M.D.

As I have been in dispensary work, I have been surprised at the prevalence of the itch, particularly among the Italians, and others of the lower foreign people who crowd together in uncleanliness, and then go through the community hawking their trinkets. Repeatedly I have seen persons covered from head to foot with this infectious disease, and on inquiry found that they were peddlars, going from house to house with cloth and other articles, which the people handle. Further inquiries have elicited the fact that they have had the eruption several years, and that others of the same dens are in a like condition. Now it is almost useless for a private or dispensary physician to attempt to eradicate the disease, even from one of them, to say nothing of exterminating the pest from the mass of filthy rags which they wear or amid which they sleep. Such dens of infection are far more worthy of public attention than many subjects of less practical importance. I have wished I could send word to the Board of Health, and have such people and such quarters taken into vigorous hands. As it is, I am afraid that our city board has reversed the old adage—attending to the dollars and leaving the cents to take care of themselves. Forty years ago a teacher of skin diseases came to the office of my preceptor, who had the oversight of large dispensary work at the north end, desiring that we would let him know of any case of scabies, for he said it was one of the rarest diseases in the city. According to my experience in that part of the city, he could not say that to-day. Boston may be an exception to other cities.

ELECTRIC BATHS FOR THE TREATMENT OF SYPHILIS.—At the General Hospital of Vienna M. Kronfeld has found that the employment of electric baths causes a more complete and efficacious absorption of mercury than other methods of administering the drug. More mercury is eliminated in the urine; no albuminuria is caused; polyuria is rare. The patients are stated to be cured in from two to four weeks after having taken from ten to twenty-five baths. Symptoms of mercurial poisoning must be looked out for in this as in other modes of using the drug.

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SATURDAY, MARCH 19, 1892.

IDIOSYNCRASY.

In the last number of his *Archives of Surgery*, MR. JONATHAN HUTCHINSON has a brief note respecting this subject. There is a want of agreement, he holds, in the minds and in the expressions of different writers as to the importance, medically speaking, of idiosyncrasy. In no other way could he understand some of the literary allusions that have lately come under his notice. For example, he has seen in a recent review of the literature of anæsthetics a statement, made with great emphasis, to the effect that no one now thinks of adducing as a means of explaining the fatal cases. "I may confess," he says, "that to my own mind it still looms out as by far the foremost of the agencies at work." Without doubt, there are other very important factors; no doubt there are different degrees of risk attaching to the different drugs used; no doubt there are some methods of application that are more perilous than others, and no doubt there are instances where a temporary lack of attention on the part of the anæsthetist is chargeable with the bad results. When, however, all due allowance has been made for these factors, it still remains an uncontroverted experience that no two persons are alike in their susceptibility, and that there are those who, without known derangement of health, are susceptible in a most peculiar degree. This peculiar personal attitude and aptitude is true of other drugs besides those that are used as anæsthetics; it may be said to run through the whole pharmacopœia. Not the least among these may be named potassium iodide, arsenic, mercury and belladonna. Every now and then there are unexpected cases of untoward results, and no skill has yet been able to recognize in advance where those results are liable to befall. To this liability the word idiosyncrasy may be properly applied, and it seems like a flat contradiction of an every-day experience to assert that it does not exist in reference to anæsthetics. During the period of MR. HUTCHINSON'S service as surgeon to the Moorfields Ophthalmic Hospital, he never lost a patient from the anæsthetic, and had very few cases of alarm. In one of these cases, however, he was not far from an accident, when engaged in extracting cataract for a man between fifty and sixty years old. Artificial respiration was needed, and with that and the nitrite of amyl, the life of the man was saved. Years passed by, smoothly enough, too, so far as anæsthetics were concerned, when again, in another cataract operation, exactly the same alarm occurred, and the same measures were put into operation. The house surgeon told the surgeon afterwards that the patient was *the same man* who years before had given them the trouble and alarm. The man had not been recognized as the same by the surgeon, but on examining and comparing notes, it was found that the patients were one and the same.

The use of the term is in some sense a confession of ignorance, and as time progresses, the clearing up of more and more of uncertain diagnoses must restrict the currency of the word. In regard to the striking experience of MR. HUTCHINSON, a lesson or two can be drawn by those who are engaged in therapeutical instruction. In the first place, it is important that the individual—like the one who illustrates MR. HUTCHINSON'S argument that undoubtedly there is such a condition as idiosyncrasy—should be plainly told that he has his personal peculiarity in the presence of chloroform, or other drug, and that he should put his surgeon on guard in the event of future operations. Many persons are so taught, but it is evident that in MR. HUTCHINSON'S case the second experience was encountered just as unexpectedly as if the first peril had never occurred. Furthermore, we hold that instances like that of MR. HUTCHINSON may wisely be used as a text to show that the personality of the patient under treatment must enter into the attack upon disease, as well as the diseases themselves, and that the personal equation will often disturb the most carefully laid plans of procedure. And so, too, on the same line of deduction, the practitioner may acquit himself of apparent blame, on account of misadventures of treatment, in the knowledge, when it comes to him, that his patients have manifested idiosyncracies in the same or in similar directions. It is, therefore, important for the sake of the physician, as well as the patient, that these personal peculiarities shall be duly noted and commented upon in the presence of those who are most intimately concerned.

SURGICAL TREATMENT OF PYLORIC STENOSIS.

The address of DR. NICHOLAS SENN, before the New York Medical Association, on the above subject, has been published quite fully in three successive issues of the *Press and Circular*. The paper is based on the history of fifteen cases wherein DR. SENN operated. Two of his operations were done for the relief of cicatricial stenósis of pylorus, by pyloroplasty. One operation was done without anæsthesia. Recovery followed in both cases. Thirteen operations were for malignant obstruction, and were gastro-enterostomies. Of these, eight are tabulated as recoveries—they survived the immediate effects of the operation—and five died. The recovered cases died in from five days to twenty months after the operation. The patient who survived the longest was aged 71 years; the oldest of the patients on the list. This man was enabled to resume business for eight months. BILLROTH has stated that in none of his cases of gastro-enterostomy for malignant trouble was life continued beyond a year after operation. Three of DR. SENN's patients, two of them surviving three months and one of them four months, had no signs of pyloric constriction after the operation. The author of the address concludes with the following propositions: 1. For cicatricial stenosis of the pylorus, pyloroplasty as devised by HEINEKE-MIKULICZ is the safest and most efficient operation. 2. Pylorectomy in the treatment of cancer of pylorus is justifiable when the disease is limited to the organ primarily involved, and the patient's general condition offers no contra-indication. 3. Gastro-enterostomy, by the aid of large, moist, perforated plates of decalcified bone, should be done as early as positive diagnosis is made and when a pylorectomy is not warranted by the local or general conditions of the patient.

An important lesson, drawn from the study of these cases of malignant pyloric disease, especially, is the desirability of not delaying the proffer of surgical treatment until the strength of the patient has ebbed to so low a point that death is liable to ensue from the immediate effects of the operation. DR. SENN predicts that better results will be obtained by surgeons when the profession sanctions an earlier intervention with the knife.

COLUMBUS MEDICAL COLLEGE.

This institution seems to be conducted in a very queer fashion. At the recent commencement, a majority of the faculty decided that two of the candidates for the degree of doctor of medicine were unqualified.

Their action was sustained by the board of censors of the college. In the face of this, the board of trustees of the college proceeded to and did grant diplomas to the two unqualified candidates. A natural result of the trustees' act was the immediate resignation of two members of the faculty, PROFESSORS N. R. COLEMAN and M. EIS. Others are likely to follow.

A large part of the board of trustees of the Columbus Medical College are not members of the medical profession; but this did not prevent their feeling competent to pass upon the professional attainments of students rejected by a majority of the teaching faculty and the unanimous board of censors, all of whom are physicians.

Such a condition of affairs in a reputable medical college indicates a necessity for state boards of examiners, for it is altogether possible that some other schools are conducted on the same or a similar plan to the one referred to in Columbus.

The officers of the colleges claiming to be the best should unitedly demand state legislation of this nature. Such legislation, with uniform requirements from all candidates for the doctorate degree, would be certain to send young men to schools where they would be reasonably sure of receiving proper instruction, and not to an institution where an unprofessional board of trustees assumed authority to give diplomas to any applicant, no matter how ignorant.

In fact, this action of the trustees of the Columbus Medical College removes that institution from the list of reputable medical colleges.

THE PAN-AMERICAN MEDICAL CONGRESS IN THE WEST INDIES.

DR. F. W. HUTCHINSON, *of Providence, R. I., who* has been appointed assistant secretary-general of the Pan-American Medical Congress for the British West Indies and Venezuela, is now visiting the islands of the Spanish Main in the interest of the Congress. He is vested with power to make appointments for those countries. The hearty coöperation which he is receiving is indicated by the report of a meeting at St. Kitts, printed in another column.

There are many reasons why the medical profession of the West Indies and of the United States should be more intimately acquainted. The exchange of American breadstuffs for West Indian products, particularly sugar, forms the basis of a commerce of more than seventy millions of dollars of annual value. A commerce of this magnitude deserves the protection of intelligent and uniform quarantine regulations. The absence of such uniform regulations is to-day the most serious impediment to the exchange of commodities between the United States and the Antilles. The fact that the colonial governments of the Spanish Main are without treaty-making power is no doubt an impediment to progress in that direction, although delegates from the colonial governments at Demarara and Barbadoes have been in Washington during the last year, with the object of readjusting trade relations between those colonies and the United States. In any adjustment of trade relations the quarantine question must play a part. This question is a moot one, involving many unsettled scientific problems, and until these problems are settled, the general question will not be ready for the plenipotentiaries. It was precisely because of this status of the question that the recent treaty-making congress of the American republics failed to unify the quarantine regulations between South America and the United States, leaving the matter as they found it, viz., with one set of rules for the east coast and another for the west coast of South America, and still others for the United States. The Section of the Pan-American Medical Congress devoted to marine hygiene and quarantine, under the chairmanship of Surgeon-General Wyman, of the Marine-Hospital Service, offers an opportunity for the free discussion of all the scientific problems involved. The colonial governments should see that they are represented in these deliberations by the ablest talent that they can command.

There is a very important business reason why the West Indian physician should come to the United States and become personally acquainted with his confrères in this country. Dr. Hutchinson's admirable book, "Under the Southern Cross," has called the attention of the American profession, in a most discriminating way, to the value of the West Indies as health resorts; and from October to April, or even later, there is not a ship sailing from the Atlantic or Gulf ports to the Antilles but that carries a large number of invalids seeking health in the balmy breezes of occidental India. It would be highly desirable if the family physician in this country could issue to his traveling patient a letter of introduction to a reliable medical man at the other end of the voyage. It is in the course of events that large numbers of such letters will be issued, and, naturally, they will be addressed by preference, to personal acquaintances. The Section on General Medicine and that on General Hygiene and Demography, which latter will, of course, include Climatology, ought to receive many contributions from the West Indies.

Medical Promotions in the Navy.—The *Naval Register* for 1892, recently issued, indicates the following as among the changes in medical corps rank. By the retirement of Medical Directors J. Y. Taylor and T. J. Turner, two medical inspectors receive promotion, namely, Grove S. Beardsley and Henry M. Wells. The retirement of Medical Inspector T. Woolverton, and the changes just named, enable the promotion of Surgeons Edward Kershner, J. R. Tryon and W. H. Jones.

The Practitioner of the Inland Sections.—If Dr. Weir Mitchell's estimate of the place and function of the rural physician is correct, it is desirable that the latter should without delay, take one or two more medical journals. Dr. Mitchell has stated that the true measure and index of advance in the healing art are not determined by the work of single men, but by what the country doctor is.

The Albany Medical Annals.—With the January issue of this journal, the editorial charge passed into the hands of Dr. Howard T. Van Rennselaer. The *Annals* appears in a new dress, and with an increase of one-third more reading matter. Dr. S. B. Ward has a short, practical contribution on the scope of alcoholic stimulants in typhoid fever — a clear summary of our present knowledge of the subject, from physiological and clinical points of view.

ASSOCIATION NEWS.

Section on Ophthalmology. — The next annual meeting of this Section will be held in Detroit, Mich., June 7, 8, 9 and 10. The Cadilac Hotel has been selected as headquarters. For the purpose of becoming better acquainted, and cultivating a feeling of good-fellowship among the members of this Section, they will dine together Wednesday, June 8, at 6 p.m., at the Cadilac Hotel. The price of the tickets will be two dollars each, and can be obtained from any member of the Executive Committee. All those expecting to be present will kindly notify the Committee.

The Section will hold two working sessions daily. The first will open at 9 a.m. and close at 11 a.m. The second will open at 3 p.m. and close at 6 p.m.

Titles of papers for the next meeting should be sent at once to the Chairman of the Section, Dr. J. L. Thompson, of Indianapolis, Ind., or to Dr. George F. de Schweinitz, 1401 Locust street, Philadelphia, Pa.

The Committee published the transactions of the last meeting in a handsome volume, the contents of which reflected much credit on the work done at Washington, D. C. We expect the Section will considerably increase its membership this year, and that the quality of its work will be, as it should be, of the *very best.*

S. C. Ayres, Cincinnati, O.,
F. C. Hotz, Chicago, Ill.,
Edward Jackson, Philadelphia, Pa.,
Executive Committee, Section on Ophthalmology, A. M. A.

The Section on State Medicine.—It is desired to make the approaching meeting of this Section one of unusual importance and profit. Further reports are expected from the Committee on School Hygiene and its several members. The subjects to be discussed will be as follows:

First Day—The Annual Address by the Chairman. Report of the Committee on School Hygiene.

Second Day — Pollution of Rivers and Inland Streams; its Effect upon Public Health, and Measures for its Prevention.

Third Day—Needful National Legislation for the Protection of Human Life. Miscellaneous Papers.

The Development of the Section, and the Question of a Section Council of the Association.

All members of the Association, or physicians desiring to become so, who are interested in sanitary work and discussion, are requested to forward their names as promptly as possible to either of the undersigned. Any desiring to read papers will kindly send the complete title of the same, with their own names, as they desire them to appear on the programme.

Benj. Lee, M.D., *Chairman*,
1532 Pine St., Philadelphia, Pa.
Laurence F. Flick, M.D., *Secretary*,
736 Pine St., Philadelphia, Pa.

ITEMS.

Washington State Medical Society.—The Washington State Medical Society will hold its next annual meeting at Walla Walla, May 15, 1892. The following are Chairmen of the various committees: Anatomy and Physiology, John South, Hoaquim; Chemistry and Bacteriology, H. J. Essig, Spokane; Materia Medica, J. J. Shannon, Seattle; Medicine, C. K. Merriam, Spokane; Surgery, Jas. J. McKone, Tacoma; History and Necrology, G. A. Weed, Seattle; Publication, E. E. Heg, North Yakima; Ophthalmology, F. H. Coe, Seattle; Obstetrics, T. V. Goodspeed, Seattle; Nervous System, Wilson Lockhart, Spokane; State Medicine, G. S. Armstrong, Olympia; Revision of Constitution and By-laws, H. C. Williston, Port Townsend; Arrangements, Wm. Wenslick, Port Townsend.

Medical Society of the State of California.—The annual meeting of the State Society will be held in Union Hall, Post street, San Francisco, from April 19 to 23, when it is hoped that the profession will be largely represented. The committee of arrangements has obtained a reduction of 33 per cent. on round trip tickets to those attending the meeting who travel over the Southern Pacific system; and this applies not only to members, but to their families, and to any regular physician attending the meeting. These rebate certificates will be distributed to members early in March, and others may obtain them by addressing Chas. C. Wadsworth, 606 Sutter street, San Francisco. The social features, which during the last two meetings have proved so enjoyable, will again form a part of the program. Applications for membership must be sent to J. H. Wythe, Oakland, Chairman of the Board of Censors, accompanied by a fee of $7. Wm. Watt Kerr, Secretary, 600 Sutter street, San Francisco.

An examination for the position of resident physician in the Methodist Episcopal Hospital, of Philadelphia, will be held on Tuesday, March 29, 1892, at the hospital, Broad and Wolfe streets, Philadelphia, at 8 p.m.

The examination is open to both men and women; but applicants must, in accordance with the charter of the hospital, have the degree of Bachelor of Arts. Two residents will be elected by the trustees from the candidates who obtain the first four places in the examinations of the Medical Board.

Applications to be made to Dr. John B. Roberts, 1627 Walnut; Dr. Richard C. Norris, 1028 Spruce; Dr. Wm. C. Hollopeter, 1408 North Thirteenth St.; Dr. H. H. Kynett, 1728 Spring Garden.

The Belgian Society of Gynecology and Obstetrics, under the patronage of the Belgian Government, has taken the initiative in organizing "The International Periodical Congress of Gynecology and Obstetrics," the first session of which will be held in Brussels, September 14 to 19 inclusive, 1892. Three leading questions will be offered for discussion:

1. Pelvic Suppurations; Referee, Dr. Paul Segond, Paris.
2. Extra Uterine Pregnancy; Referee, Dr. A. Martin, Berlin.
3. Placenta Prævia; Referee, Dr. Berry Hart, Edinburg.

Fees: Members participating in first session, 30 francs. (This will entitle the holder to a copy of the proceedings of the Congress.)

Founders (life membership), 300 francs.

In connection with the Congress there will be an International Exposition of instruments and appliances, pertaining to Gynecology and Obstetrics.

All communications pertaining to this Congress should be mailed direct to the American Secretary, who will promptly furnish all information. All notifications to be forwarded should be received by August 1st.

Everything points to a great success in this Congress. Though notices concerning it have been rather late in this country, already men of celebrity have promised to visit and contribute papers. Among the many foreigners who have written to the Secretary General endorsing and promising support to the undertaking, may be mentioned the following eminent men:

Belgium: De Roubaix, Sacre, Mirriar, Pigeolot, Charles, Sanpart, and others.

Italy: Porro, La Torre, Mangiazalli, Bozzi, Morisain.

France: Pean, Demous, Fochier, Auvard, Doleris, Pozzi, Tarnier, Budin, Terrillon, Terrier, and others.

England: Lawson Tait, Wm. Priestly, Champneys, G. Elder, J. White, Watt Black, Thornton, Doran, Spencer Wells, Bantock, and others.

Germany: Martin, Leopold, Sanger, Gusserow, Veit, Winckel, Hegar, Kaltenbach, Freund, Heyder, and others.

Switzerland: Reverdin, Vuillet.

Russia: Slaviansky.

Sweden: Saliss, Westermark.

Turkey: Chatazian.

Holland: Stokvis, Treub, Nyhoff.

Austria: Pawlik, Albert, Chrobuk.

Finland: Engstrom, Heinricius, Pippingohold.

Norway: Statfeldt, Howitz, Meyer.

All communications to be addressed to the American Secretary. Further details will be furnished as soon as received.

Dr. Jacobs, Secretary General,
12 Rue Des Petits-Carmes, Bruxelles.
Dr. F. Henrotin, American Secretary.
353 La Salle Ave., Chicago.

Flint Club of Baltimore.—The medical organization, bearing this name, is a coterie devoted to gastronomics and diversion. Its membership of thirty or more hold monthly reunions where medical talk is tabood; all professional cares and successes are alike forgotten for a time at the portal. Whatever may have been the intention of the members when they named the club in honor of the dignified and stately Flint, the appropriateness of the appellation to person honored is not always visible. The plainest kind of English is spoken to the guests—freely enough admitted, if they are willing to submit to the initiatory rites—and to the members who make any remarks that are not absolutely original. The etiquette of the club must be observed by guests whether they comprehend it or not. On one occasion a visitor was called upon to speak and to hush at the same moment—and he complied by addressing the members in the sign language, and by so doing for once staggered his hosts. Sociality is a strong feature of Baltimore life, and helps that city to maintain its rights to the proud position once given it by Dr. Oliver Wendell Holmes, namely, that of being "the gastronomic hub of the Universe." Along with this trait go hospitality and the *savoir vivre* that are proverbial. The physicians, too, says the *Maryland Medical Journal*, are true to their environment and live together in amity and cordiality; professional discrepancies and gossip are at the minimum, and kindly ethical relations are the rule of life. So that Baltimore is the suitable place for a company of social, clever and prosperous physicians to set up their altar under the name of Flint Club.

The Pan-American Medical Congress on the Leeward Islands, West Indies.—At a meeting of the medical men of this Island, Dr. Branch, President of the Leeward Islands Branch of the British Medical Association, in the chair. Dr. Hutchinson, of the United States, Assistant Secretary to the Executive Committee of the Pan-American Medical Congress, explained the objects of the congress, and invited the doctors of St. Kitts-Nevis to join.

Proposed by Dr. Fueman, seconded by Dr. Nety, "That this meeting cordially approves of the aims and objects of the Pan-American Medical Congress." Carried.

Nem. Con. All present were enrolled as members.

It was agreed to ask Dr. Hutchinson to appoint Dr. Branch a foreign member of the Executive Committee of the Congress and Drs. Boon and Mapleton, secretaries.

The doctors present promised to support the congress and further its aims and objects.

A. Boon, M.D., Secretary.
Fellow of the Royal College of Surgeons, England.

SELECTIONS.

The University of Dorpat, in the Baltic provinces of Russia, which has hitherto had German professors, and has been attended by German-speaking students, is to be Russianized, the Government having given notice that after a certain date, in the near future, only the Russian language will be allowed in the lectures and examinations.

Profit Sharing.—In a very comprehensive study of the economic distribution of earnings versus profit sharings (*Social Economist*), Mr. Alfred Dodge states that "improved machines can be invented and manufactured, but improved laborers can only be developed. One may work a machine till it breaks down, then have a new and perhaps a better one made to take its place. But this is not true of labor. If laborers are poorly paid and overworked, and ill housed, they not only become less efficient themselves, but their children, who are to take their places, will be no better, and sometimes even worse. In this way the development of superior laborers, to say nothing of superior citizens, is prevented." In the same manner, poorly paid and overworked doctors are apt to become less efficient, and this condition is directly traceable to that of the laborers.

Boston Bath House Company.—A company is soon to be incorporated with the above title, to establish baths for the poor of Boston, following the steps of the chief European cities, and the recently established People's Baths in New York. There is already a small establishment of this kind in Boston where, during the first year, 3,000 men, women and children made use of it. It is hoped that after the baths are established they will be self-supporting. About $40,000 are needed for the establishment of the institution.—*Boston Medical and Surgical Journal.*

To Detect Sugar in Urine.—Flint describes a simple apparatus for detecting the presence of sugar in urine, when the results of Fehling's test are uncertain. A small straight bottle or a small test-tube is fitted with a cork, through which is passed a small tube that reaches nearly to the bottom. The glass tube is bent so that the apparatus will hang over an ordinary test-tube or other convenient vessel. The bottle is completely filled with urine, with which a piece of Fleischmann's yeast, about the size of a pea, has been thoroughly mixed. In putting in the cork it is necessary to be careful to exclude every bubble of air. If the apparatus be kept for a half-hour at a temperature of from 80° to 90° F., a bubble of gas will appear if sugar be present in the smallest quantity. The apparatus may be placed in the sun or near a heater, but the temperature should not be higher than 100°.—*Boston Medical and Surgical Journal.*

The Mongolian Eye.—Kōmoto[1] has studied in detail the differences between the characteristic eye of the Mongolian nations, and of the Caucasian race. The difference between the two is caused neither by the size of the eyeball, nor the color of the iris, which is the same in both, but in the shape of the eyelids. The epicanthus, a fold of the skin covering the inner canthus, is rare in adult white persons, but exists physiologically among the Japanese, so that it is sometimes called the Mongolian fold. In the majority of cases, this fold runs obliquely inwards and downwards from the upper lid, so that the inner canthus is not round, as in white people, but is sharp. When the fold is large it spreads to the inner part of the lower lid, in which case the upper lid does not cross the cornea horizontally, but obliquely, giving the peculiar expression to the eye often met with in Japanese.

Another peculiarity of the upper lid in Mongolians is the lack of development of the orbital furrow, the groove below the eyebrows. The skin covering the upper lid is very loose, so that when the cartilage is raised, the skin is thrown into a transverse fold. When this fold is well developed, it droops slightly over the margin of the lid. This interferes with the eyelashes, directing them downwards instead of forwards.

In Japanese the cilia are short and straight. On the lower lid they are sometimes so badly developed and so few in number that they appear at first to be absent. When well developed they are sometimes bent inwards by the peculiar formation of the upper lid, and may seriously irritate the cornea. Except for this, there is no great difference in the lower lid of Mongolians and Europeans. The margin is generally more curved in white people, so that there is often a portion of the sclerotic exposed between the lid and the cornea, a peculiarity, the author remarks, which makes "their eyes looking apparently upwards generally." As the skin of the lid is less firmly connected to the subjacent tissues in the Japanese, entropion is more common, but ectropion less common, among them than among Europeans.—*Boston Medical and Surgical Journal.*

Forced Extension in Tabes Dorsalis.—Yet another violent method of treatment has been proposed for tabes dorsalis. The originator is an Italian surgeon, Pietro Bonuzzi, and the plan has been tried by him and also by Dr. Benedikt, of Vienna. It consists in applying forced extension to the spinal column, and has the advantage of requiring no special apparatus, as did the other mechanical treatment—namely, suspension. All that is necessary is to seize the feet with a towel, and carry them forwards so that the knees touch the patient's forehead, the head being raised by a cushion. Bonuzzi has found that by this method an elongation of the cord is produced which is from three to four times as great as that effected by suspension, and claims that the effects are correspondingly more brilliant. Patients who, before treatment, could neither walk nor stand steadily, could afterwards take long walks and stand easily with their eyes closed. Great caution appears, however, to be necessary, for Benedikt reports rachialgia, swelling of the thighs, and muscular hæmorrhages in some cases after treatment, and, in one instance, fainting and a general adynamic condition with vomiting, which lasted several days.—*British Medical Journal.*

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[1] Sei-I-Kwai Medical Journal, December 26, 1891.

Rickets a Parasitic Disease.—To the list of ills to which our humanity is the inevitable but unwilling heir, owning a microbe origin must, according to Mercoli, now be added rickets. This observer has already, he submits, in a series of anterior researches, traced sciatica, chorea, and hydrocephalus to their microbic sources. Continuing his investigations in the cases of children dead of hydrocephalus and rickets, he confirmed his previous conclusions, and has, moreover, he affirms, succeeded, after examining and submitting to bacteriological methods the costal nodes peculiar to rickets, in obtaining pure cultures of a specific microbe. In adults, according to this observer, the microörganism of rickets produces merely local symptoms; but, in the case of young children unaccustomed to the presence of these microbes, the affection is at first general, finally localizing itself where functional and formative activity is most intense—viz., in the osseous and nervous systems.—*The Lancet.*

Hertwig's Theory of Immunity.[1]—The theory of immunity recently propounded by Prof. Oscar Hertwig, the eminent anatomist and embryologist at Berlin, is especially worthy of note, not only because of the source from which it proceeds, but because it is an ingenious attempt at mediation between the contesting cellular and chemical hypotheses. Hertwig takes his stand upon the highly important discoveries of Pfeffer, Stahl, Gabritschewsky and others, regarding the influence of various chemical substances upon microörganisms.

The distinguished plant physiologist, Pfeffer, as is well known, found that certain chemical substances soluble in water exert an influence, part attracting and part repelling, upon freely motile plant or animal cells such as infusoria, spermatozoa, bacteria, leucocytes and their like. This phenomenon of "chemotropism," or "chemotaxis," is positive if the organisms advance towards the place from which the chemical stimulus proceeds, negative if they retreat from it. Malic acid in high dilution, for example, exercises a generally positive chemotropic effect, chloroform, a negative. That these terms "positive" and "negative" have only a relative value, is shown by the fact that while a very weak solution of malic acid will attract motile organisms towards the capillary tube in which it is placed, a stronger solution—5 per cent.—will actively repel the organisms. That is to say, the positive effect becomes a negative one as a result of the concentration of the chemical substance.

Furthermore, to continue with the example of malic acid, if the organisms are *ab initio* in a solution containing malic acid, a stronger solution of that acid will be required in order to attract them than is the case if they are in pure water. A solution of malic acid of sufficient strength to attract organisms from pure water will have no effect upon organisms already immersed from the start in dilute malic acid. On the other hand, a solution so strong as to repel organisms in pure water will, in dilute malic acid, attract them. The spermatozoa of the fern, to use the classic example, when in a weak solution of malic acid, are attracted by a solution so strong as to repel the spermatozoa when the latter are in pure water.

Negative chematropism may therefore, under changed conditions, become positive. This fact is of cardinal importance in Hertwig's conception of immunity.

The white cells of the blood are apparently very susceptible to chemotropic influences. The metabolic products of pathogenic bacteria—whether "ptomaines," "toxines," or something else—exert in general, a positive effect upon the leucocytes, and so draw them towards the source of the stimulus, that is to the "inflammatory centre."

Hertwig points out that the numerous chemotropic possibilities group themselves under two heads. In the first place, the metabolic bacterial products may be present in the blood and in the diseased tissues in almost or quite equal proportions. In this contingency there will be no effective chemotropic stimulus; and the leucocytes will consequently not be drawn towards the affected locality.

In the second place, the substances accumulated in the blood and diseased tissues are of different degrees of concentration in the two places, and this difference causes a chemotropic movement of the leucocytes. Here there are obviously two possibilities, either the higher concentration exists in the blood or in the diseased tissues. In the latter case the leucocytes are drawn into the affected locality; this is perhaps the most ordinary and well-known condition—as in suppuration. In the former case the leucocytes, which in other conditions might have gathered in the diseased area, are retained in the blood-vessels.

In Hertwig's opinion, the action of Koch's tuberculin can be best explained by reference to some such chemotropic phenomena. Suppose that the metabolic products of the tubercle bacilli are in so high a degree of concentration in the tissues as to exert a repellent, or negatively chemotropic effect upon the leucocytes, which, in consequence, shun the affected area. On the injection of tuberculin into the blood the leucocytes, after the analogy of the spermatozoa and malic acid, become attracted by the bacterial substances in the tissues which were formerly so relatively concentrated as to repel. In this way Hertwig thinks to explain the reactions following the introduction of tuberculin into the blood. On this assumption also he believes it possible to explain many of the perplexing and disastrous consequences of injections of too large quantities of tuberculin. He concludes that Koch's application of tuberculin injection "rests upon a thoroughly sound physiological foundation."

Hertwig's further treatment of the subject ventures upon the much controverted ground of the phagocyte theory and its implication. He considers that Metchnikoff's view is essentially correct, and refers the artificial production of immunity to the greater sensitiveness which the leucocytes have acquired toward the bacterial products, and consequently toward the bacteria themselves. The arguments presented in support of this view are perhaps more ingenious and suggestive than convincing.—*Boston Medical and Surgical Journal.*

Novel Treatment of Neurasthenia.—Hypodermic therapeutics continue to grow in favor. This applies not only to the chemical substances of the Pharmacopœia, the hypodermic administration of which has in recent years so much extended and is now firmly established, but bids fair to take a new departure on the lines advocated by Brown-Séquard. In this latter connection M. Constantin Paul, at a recent meeting of the Academy of Medicine, related his observations of a certain number of cases which he had treated by injections of a preparation of nervous substances into the subcutaneous cellular tissues. The patients over whom his observations of this novel therapeutic method extended numbered eleven, which he classified as three of chlorotic neurasthenia, three of classic neurasthenia, one case of permanently slow pulse, and four ataxics. The liquid used was a solution of 1 in 10 of cerebral gray matter taken from the sheep, sterilized by carbonic acid in Arsonval's apparatus. This solution was injected in the gluteal region, the dose being 5 cc. It was well borne, producing no reaction, either local or general. Occasionally a slight lymphatic engorgement was noticed, which disappeared in four or five days; but in the 200 injections to which the eleven patients were subjected, in no case was there abscess or other local inflammation. The first sensation experienced by the patients was one of comfort and returning strength, the previous muscular weakness diminishing sensibly. The vertebral pains and spinal hyperæsthesia, and, in the case of the tabetics, the lightning pains, disappeared gradually. Appetite for food also came back, and those of the patients who were previously dyspeptic now assimilated their food so well that they began to increase in weight. In the ataxics sexual power returned with the general amelioration. M. Paul concludes from these considerations that in injections of gray cerebral matter we have a nervine tonic of no mean order. He compares a neurasthenic with an accumulator which it is impossible to charge; while the condition lasts he is unable to transform his food into force. After the least effort his muscular and intellectual forces are exhausted. But the injection of nervous matter in the manner indicated promotes the utilization of food and its due assimilation; so that the nervous system now becomes a condenser, which, if charged, the subject acquires force which he can dispose of at will. It is to be noted that it is the nervous force which first returns in all these cases. Following this, and as a consequence, the power to do intellectual and muscular labor comes back; the improvement in the condition of the blood follows later on. In conclusion, M. Paul expresses his conviction that this new therapeutic departure will be found to ameliorate the neurasthenic condition much more rapidly than the methods of our ordinary materia medica — an opinion which strikes one as being rather sanguine.—*The Lancet.*

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[1] Ueber die physiologische Grundlage der Tuberculinwirkung; eine Theorie der Wirkungsweise bacillares Stoffwechselproducte, Jena, 1891.

Lactate of Strontian in Albuminuria.—M. Constantin Paul reports that he has used this drug in cases of albuminuria, both of cardiac and renal origin, and has found that it causes a marked diminution of the amount of albumen passed. This result he attributes to the aid which the medicine affords to the digestive function, causing the food to be more thoroughly digested, and therefore not so many toxic substances formed and absorbed into the blood. He gives the remedy in doses of about 1½ drachm, by day in separate doses.—*Provincial Medical Journal.*

An Unpleasant Delusion.— In the *Times* of January 28, it is mentioned in the telegram from Russia that the peasants of the parts most affected by the present terrible famine have conceived the idea that it is the doctors who are to blame. In some places it seems to have become very lively for the medical men.—*Provincial Medical Journal.*

Influenza and The Barometer (*L'Union Médicale*, December 1891).—M. Masson has made researches in the meteorological conditions observed during the influenza epidemics, and finds that in general the exacerbations of the disease coincide with a damp, raw condition of weather, not very cold, but with an elevated condition of the barometer, thus indicating increased atmospheric pressure. This rule he found to hold good in Vienna, Berlin, Brussels and Paris, but not in Russia, where the disease is endemic. In that country the mortality increased when the barometer went down, but there was an augmentation of moisture in the air. M. Masson has shown by diagrams that the curves of mortality and those of the oscillations of the mercurial column coincide nearly exactly week by week, their maxima and minima corresponding. [There is a possibility of error here. Death from such a disease as influenza does not occur directly a patient is attacked, and it does not follow that because the high barometric readings correspond with the days when most deaths occur, that the disease is then exerting its greatest force. The readings of the mortality curves should be examined for a few days at least before the maxima are reached.—*Reporter.*]—*Provincial Medical Journal.*

Three Kinds of Favus. By Dr. P. G. Unna (*Fortschritte der Medicin*, No. 2, 1892). (Original.)—Quincke was the first one to ask whether there existed more than one kind of favus. If it can be shown that there are several kinds, the clinical shortsightedness must have been great, for the unity of favus, a disease known for fifty years, had never been questioned. Assisted by Drs. Frank, Williams, Roberts and Douglas, Unna came to the conclusion that there are at least three kinds of favus, which he named as follows: Favus griseus, F. sulfureus tardus, F. sulfureus celerior. He describes the respective scutula as they appeared on mice. The corresponding fungi are as follows: Achorion euthythrix, A. dikroon (not dichroon), A. atakton. This is also Unna's nomenclature. The experiments were carried out on the investigators themselves, on mice, on rabbits, etc. The mouse which falls a victim to favus, is eaten by its companions, and the author considers this is the most likely explanation of the spread of the disease. From his experience, mere contact does not appear to produce the disease as frequently as he had thought on *a priori* grounds. Two of the above kinds of favus have already been observed on mice in the free state. There is a colored plate showing scutula of F. griseus and F. sulfureus celerior side by side on the human skin; also an illustration of F. sulfureus tardus on the head of a mouse.—*Provincial Medical Journal.*

Tennessee State Medical Society. — The fifty-ninth annual meeting of this grand old medical organization is near at hand, the time fixed being the second Tuesday in April (12th), and the place, the beautiful, romantic and most hospitable city of Knoxville, whose citizens have no equal on the face of the earth for their unlimited hospitality, and a courtesy and gallantry worthy of Admiral Critchton himself. Of the beauty of the fair daughters of this gem city of the mountains, words are incapable, and the mind can only conceive, after the eye has beheld, the extent of their loveliness and grace.

I confidently expect to see good and earnest work done at this meeting, all along the line of medical progress. One subject in particular, I would like to see early and properly considered, and a strong and emphatic endorsement given to the creation by our national government of a "Secretary of Health," *a member of the President's cabinet;* legislation looking to this end, now pending before the United States Congress, may result in a success that will prove of untold value to the men, women and children of this great country, and those who come after them, if it receives that endorsement the occasion demands from the profession throughout the Union.—*The Southern Practitioner.*

Therapeutic Action of Certain Herbs and Vegetables. Thyme, marjoram and sage are digestive tonics and antispasmodic. Sage is also slightly astringent and diaphoretic and in an infusion of 30 grams to half a litre of water is an excellent drink in cases of common cold. Saffron is not used as much as formerly as a medicine, and very little, if at all, in cooking, yet it is useful as a stomachic in nervous dyspepsia, and as a stimulant drink for children. Anise seeds are carminative and tonic; vanilla, and all spices, such as pepper, ginger, etc., are good digestive stimulants. Ginger has diaphoretic properties; cloves and cinnamon are astringent and antispasmodic, relieving nausea and flatulency in dyspepsia.

Nutmeg is a good digestive stimulant if used in moderation. Water cresses, celery and chicory are tonic, diuretic, and useful in rheumatism and nervous disorders. Carrots, radishes and turnips are laxatives and diuretic. Italian singers drink the juice of cooked turnips for impairment of voice. Beets are nourishing, and laxative. Jerusalem artichokes are useful in rheumatism, as well as celery, radishes and asparagus. Potatoes are nourishing and slightly sedative. Cucumbers are purgative, tomatoes healthy and refreshing when eaten raw, because they contain mineral salts and a volatile oil which is lost in cooking. Lentils are very nourishing; lettuce is diaphoretic, slightly narcotic, and has a favorable action on the digestive organs. All kinds of onions constitute a valuable food. Garlic, which has a stronger effect than other varieties of onions, when roasted and applied as a poultice, is an excellent remedy in cases of sore throat, earache and toothache. Crushed and applied to the soles of the feet it excites the circulation and nervous system; administered internally it is a good stomachic, expectorant, and antispasmodic, arresting convulsions in children and inducing sleep. Horse-radish is a digestive stimulant of great value, especially useful in scurvy and rheumatism. Mustard is tonic, stomachic and stimulant either in the form of the seed or powder; it is also an efficient emetic. All kinds of pepper are serviceable in malaria and dyspepsia, cayenne pepper being the most useful.—*Journal de la Santé.*

Summer Diarrhœa of Infants.—Clinical experience, as shown in the successful treatment of gastric disorders by irrigation of the stomach, and the antiseptic treatment of the entire alimentary canal, forces the conviction that these disorders which are under discussion are the result of decomposition processes, which are caused by bacterial agencies. Starting with the hypothesis that the contents of the alimentary canal are the substratum from which the intoxication which gives rise to gastrointestinal disease proceeds, the following questions are submitted:

1. Do the contents of the stomach in dyspepsia in young children have a relatively greater quantity of microörganisms than the contents of the stomach of healthy children?

2. Is there a relation which can be determined between the relative quantity of germs in the stomach of sick infants and the intensity of the disease from which they are suffering?

3. What are the relations between the relative quantity of germs in the contents of the stomach and the intensity of the disease on the one hand, and climatic factors, which influence the destruction of the milk, the factor of temperature particularly, on the other hand?

To answer the foregoing questions, a quantitative bacteriological analysis was necessary, of contents taken from the stomach of a living child.

Investigations of this character on an extensive scale were made by the author, and from these it was concluded that in the acute dyspepsias of infants one has to deal with spores, which are antagonistic to the acid of the contents of the stomach, are introduced with the nutriment, and develop luxuriantly at the temperature of the body. The phenomena of severe dyspepsias, and especially those of cholera infantum, are the phenomena of acute intoxication; hence, it is reasonable to seek for the cause of the disease in the poisons generated by the saprophytes of the contents of the stomach.

These diseases are most destructive at the time when high temperature, through the action of microörganisms, works destructive changes in food substances, and almost disappear when the weather becomes cool. There are also cases which have the character and etiology of general infectious diseases.—*Jahrbuch of Kindersheilk.*

A Secretary of Public Health.—Yes, there is now a nearer possibility than ever before of securing legislation of the most vital importance to the people of this great country.

Senator Sherman introduced, December 10, a bill to establish a Department of Public Health, under the charge of a medical officer to be appointed from civil life by the President. This department shall obtain from consular officers at foreign ports all information available in regard to the sanitary condition of such ports and places, and also all information accessible from State and municipal authorities of the sanitary condition of places within the United States. All information gathered to be embodied in the form of a bulletin and transmitted weekly to the marine hospital service, collectors of customs, and to State and to municipal health officers. The department also shall, as far as it may be able, procure and tabulate statistics relating to marriages, births, deaths, the existence of epidemic and other conditions affecting public health. The department will coöperate with State Boards of Health, the Signal Service, medical department in the army, and other branches of the government, and utilize the researches so as to make the department a repository of public sanitary comfort. All rules governing the service are to be framed by the medical officer in charge, and are to serve for the instruction of consular officers abroad, and for masters of sailing vessels bound for the United States from foreign ports.

This bill has received most favorable endorsement from other United States Senators, and in all probability will pass satisfactorily before the higher branch of the National Legislature, there being a Republican majority.

For many years I have been much interested in this movement. In my address before the general session of the American Medical Association at its meeting in Washington, in 1884, I devoted the greater part of the time allotted me in a consideration of this subject, and advanced arguments that have not yet been refuted. I have, from time to time, advocated this measure since, in the editorial pages of this journal, and I defy any one to deny or adduce argument of validity in refutation of so rational a movement of progress.

In my private correspondence on this subject I had the statement from one high in authority, a recognized leader for many years in the Democratic party, that "the measure was a dangerous one, as it might interfere with the time-honored doctrine of the Democratic party in regard to 'State Rights.'" Bah! away with such sophistry. Does the Attorney General of the United States in any way interfere with this principle? There he has stood, a representative of his party for years past, at the head of the legal and judicial affairs of this great nation, the legal adviser of the President and of Congress. Has he ever dared to step beyond the protective barriers of the Constitution?

Again, it has been suggested that the appointee of the President of the United States might not be a suitable or an efficient officer, or might use his office to perpetuate his party in power. Had this ever been demonstrated as a matter of fact in regard to the appointment of other Cabinet official positions, they would have been abolished or modified long ago. Yes, as with the Department of State, of the Treasury, Army, Navy, Justice, the Interior and Agriculture let the people hold the President to a strict accountability as to the capabilities, the qualifications, and the integrity of each of his appointees, and let him hold the appointee responsible for the discharge of the duties of his particular department.

If epidemic invasion or endemic disease had any respect for State rights, there might be some slight or *quasi* reasoning against this measure on this ground. If these terrible scourges could be controlled by individual, local, municiple, county, or State officials, then there would be no reason for such a measure.

In the early days of this republic there was no need for a Secretary of the Interior, "yet as Time put his sickle in among the days," the area of territory and number of population increased, the need arose, and was timely met by the members of our National Legislature. So, also, as to the Department of Agriculture. And now that we have increased from 3,000,000 to nearly 70,000,000 people, with many large centres of dense population, with a vast influx of emigrants continually pouring into our ports, with our immensely increased commercial relations with other nations, with the vastly improved means of rapid transit from other countries to this, and from one part of this country to another, there is a most imperative demand that a measure of so momentous an import to our entire people should receive that consideration it so justly merits at the hands of our law-makers.

I am gratified, indeed, to see that many of the leading medical journals have recently been considering this subject, and favorably; and I sincerely hope that every member of the committee appointed at the last meeting of the American Medical Association, with Dr. C. G. Comegys, of Cincinnati, as its chairman, will consider this an individual matter, put his shoulder to the wheel and at once go to work, and continue at it tirelessly and unceasingly until we have what our entire people need, irrespective of party, creed, or previous condition—a national Secretary of Public Health. —*The Southern Practitioner.*

Public Test-offices.—An important feature of the work to be done at the hygienic laboratory at the University of Michigan, at Ann Arbor, is the examination, at a nominal fee to cover actual expenses, of articles of food and drink, on request of health-officers throughout the State. Such work is already done to a limited extent, but it is proposed hereafter to enlarge its usefulness by making it available to sanitary officers of the State.

The usefulness of such a laboratory could be still further extended by allowing citizens generally the privilege of having tested, at a nominal cost, not only suspected articles of food, but such articles of domestic use, as are liable, at times, to contain poisonous substances. For a number of years there has been established in Paris a public test-office, where all articles of food, beverages, etc., are analyzed and tested by experts, who also perform the duties of inspectors of markets and among the tradesmen. For a nominal sum, and in some cases gratuitously, anyone can ascertain the composition of any suspected article of food. Articles of domestic use, clothing, colored toys, wall-papers, etc., are also examined, in order to detect any poisonous ingredients that may be present.

The establishment of a public test-office would excite popular interest and be the means of instructing the people in matters closely connected with their physical well-being. Indifference to causes acting injuriously upon health is rightly attributed to the want of proper knowledge. The chrome-yellow poisoning in this city some years ago would never have reached the proportions it did, had the people been in possession of the knowledge that leads to suspicion.

It is very necessary to have test-offices and inspectors to search for deleterious articles of food or of domestic use, but it is quite as important to secure the coöperation of the public and keep active their interest in measures employed to prevent the sale or use of such articles. The public should be made to assume a share of the responsibility of noting and reporting suspected articles, and in no better way can this be accomplished than by offering free facilities for investigation.

The moral effect of establishing a bureau of investigation would be repressive if not preventive of practices now foisted upon the masses because of their supineness and lack of information. By freely offering the services of experts, the coöperation of the public would be secured, and as a result greater progress would be made not only in detecting, but also in breaking up harmful practices that are none the less common because they so generally escape notice.—*Medical News.*

Chronic Ostitis and Abscess of the Tibia of Long Standing.—The following case appears to me a most interesting one, as showing the prolonged duration of chronic inflammation of bone, and the liability to the intercurrent formation of abscess.

The patient, a gentleman forty years of age, suffered a fracture of the tibia when seven years of age. Whether the fracture was compound or not he does not know, but I infer from his history that it was. It was followed by severe inflammation and necrosis of a portion of the bone. Ever since this early accident, he from time to time has experienced more or less pain at the site of the fracture, which was near the junction of the lower with the middle third of the tibia, and slight pressure has always been sufficient to make him wince. He states that ever since the accident the lower portion of the bone has been quite tender, and has troubled him a great deal during change of weather. About six years ago he began to have pain in the upper portion of the tibia, principally marked at the articular extremity; more or less swelling was perceptible, and has continued to the present time. There have been occasional exacerbations, with quite acute pain. There is no history of syphilis, or any infectious disease, save scarlet fever in his youth. During the exacerbations of pain and swelling the patient has been compelled to use crutches. Within the last few weeks the pain has been exceptionally severe, and the difficulty of locomotion more marked than at any previous time.

At present the entire tibia is swollen, its diameter being fully double the normal; the muscles of the limb are atrophied from disuse, and possibly the reflex effect of the osseous inflammation and consequent disturbance of nutrition; there is excessive tenderness over the tibia, particularly marked at its upper and inner aspect. In this situation a marked nodular swelling exists, indicating a subperiosteal bony deposit. Another spot of a similar character is discoverable near the site of the old fracture. Numerous cicatrices adherent to the bone are present over the anterior surface of the tibia at points from which the patient says dead bone has been removed, or has escaped spontaneously from time to time.

The diagnosis is chronic ostitis, with osteo-sclerosis of considerable extent, and a probable abscess (possibly a sequestrum) in the upper cancellous extremity of the bone.

A free incision was made in the entire length of the tibia. The periosteum was found greatly thickened throughout. Subperiosteal nodes were discovered at the site of the thickening described; these were perceptible before the operation. The periosteum was peeled back and the bone exposed, and found to be of the peculiar ivory-like consistency and appearance characteristic of osteo-sclerosis. After considerable gouging and chiselling through the hard, ivory-like structure, an abscess was exposed in the upper extremity of the bone, which contained about a tablespoonful of moderately thick pus and was lined with a thin layer of granulations, and was evidently of quite recent formation. This abscess was probably tuberculous. No examination for bacilli was made, however. It was probably the result of a secondary tuberculous infection. The cavity was thoroughly cleaned out, and the bone drilled with a small drill in various directions surrounding the cavity. A linear osteotomy was performed through the lower portion of the bone, and the subperiosteal nodes thoroughly chiselled away, with removal of enough of the ivory-like bone beneath them to insure repair. The cavity is filling up nicely, and the pain is completely relieved. The result, undoubtedly, will be restoration of the limb to its normal degree of usefulness.—G. Frank Lydston, M.D., in *Medical News*.

Important to St. Louis Medical Students.—Action of great importance to medical schools in general, and to those of St. Louis in particular, was recently taken by the Oregon Supreme Court. The State Board of Health had adopted a rule defining a medical institution in good standing to be one requiring three regular courses, or sessions, of six months each, extending over a period of three years' time. A physician named Barwood was refused a certificate on the ground that the school from which he had graduated did not have such three years' course. He brought the case before the Circuit Court, and a decision adverse to the power of the State Board to make such distinction was rendered. On appeal to the Supreme Court this decision was overruled and the authority of the State Board was sustained. This decision will go far toward settling the disputed question of the authority of State Boards of Medical Examiners to make such rules. By the close of the present year the requirement of a three years' course of study before a certificate is granted will be in force in three-fifths of the States of the Union. There are three medical colleges in St. Louis: the College of Physicians and Surgeons, the Marion-Sims Medical College, and the Beaumont College. In all of these the two years' course prevails. Unless this is altered, graduates will find more than half the States closed against them.—*St. Louis Post Dispatch.*

On the Local Application of Chromic Acid in the Treatment of Syphilitic Affections of the Oral Cavity. By Dr. E. Feibes, of Aix-la-Chapelle (*Therapeut. Monatshefte*, November, 1891).—The author defends the local application of chromic acid in syphilitic affections of the mucous membranes. In his opinion no other treatment can compare with it. Nitrate of silver is laid aside and banished. Chromic acid applied locally, combined with general treatment, cures in a very short time the most obstinate ulcers, white patches (after previous scraping with the sharp spoon), fissures at the angles of the mouth, specific geographical tongue (lingua geographica), psoriasis of tongue and specific ulcers of the tonsils. The treatment of mercurial stomatitis appears to be very good. Whenever inunction of mercury is resorted to, the mouth is cleansed with tooth-powder and mouth-wash (chromic acid compounds?) In bad cases of stomatitis, Feibes, by means of a fine probe, armed with wool, clears away the putrefying, stinking masses from between the teeth and gums. He then applies in a similar way wool dipped in a concentrated solution of chromic acid, after previously painting the parts with cocaine. In this way it is never necessary to suspend the general treatment. The mouth is washed out after each application of chromic acid with aq. chloroform. (Von Boltenstern, *Fortsch. der Med.*, No. 3, 1892.)—*Provincial Medical Journal.*

Concerning Multiple Neuritis. By Dr. J. Pal (*Wiener klinischer Wochenschrift*, 1891).—The author remarks that our knowledge of multiple neuritis has been obtained for the most part during the past ten years, and pathological cases, which were then unexplainable, now appear apparent.

The history of each of the cases are related, and concerning their etiology, they are those agents which we ordinarily attribute to be the causation of the disease. For instance, two cases were due to alcohol, two more due to specific diseases, erysipelas and typhoid fever; one from exposure and one from arsenical poisoning. In the remaining one the etiology was obscure.

After the death the nerves examined, such as the opt motor oculi, abducens, facial, auditory, radial, peroneal, a in some cases the phrenic and pneumogastrics, etc., show quickness of degeneration, with the exception of the au tory. In the spinal cord the posterior root nerves we found diseased, as were the postero-lateral columns from t dorsal region to the medulla. The posterior median c umns showed very small degeneration tracts over a c responding area. The ganglia on the posterior roots we normal apparently, and it is to be remarked that neither t fibres of the posterior roots going to the Spitzka-Lissatu columns, nor the columns themselves, were affected. In t cervical region the direct cerebellar tract was degenerat and going downward. The crossed pyramidal tracts show similar changes, particularly in the cervical and upper d sal. The direct pyramidal tract showed only slight chang and this but in a very small area. After reaching the dors segment of the cord, the changes in the anterior white m ter seemed to be limited to the crossed pyramidal tracts. the opinion of the author, these changes were analogous those which might occur from a focus of diffuse neuritis the dorso-cervical junction of the cord, but no evidences such a process could be found. At the end of his article author expresses his clinico-anatomical results as follow

1. Multiple neuritis occurs often as a primary affection the peripheral nervous system, and the changes in the nerves may be independent of any change in the cells of *the anterior coronal.*

2. In the course of multiple neuritis the central nervous system may become involved, the changes resulting from the same causes that caused the primary disease.

3. Although the funiculus gracilis and funiculus cuneatus may be and frequently are degenerated, this degeneration need not be strictly systemic.

4. The so-called neuritis of tuberculosis shows peculiar clinical symptoms, such as œdema of the feet and diminution of cutaneous irritability to the faradic currents, and these symptoms are sometimes the only indications of the multiple neuritis.—*Jour. of Nervous and Mental Diseases.*

Hysterical Attacks Assuming the Form of Jacksonian epilepsy.—Dr. Ballet (*Gazette des Hôpitaux*) calls attention to the fact that while hysteria often resembles the attacks of ordinary epilepsy, it may sometimes approach very closely to the partial or Jacksonian form. He cites the case of a young girl, suffering from "grande hysteric," and presenting the characteristic symptom of left hemi-anæsthesia. She has had the classical "grande attaque" a number of times, but, of late, convulsive seizures of a different nature have made their appearance.

These may be shown by simply rubbing one of the two hystero-genetic zones, to be found on the patient's body, when immediately the head turns toward the left side. Froth appears at the mouth, and the muscles on the left side of the face begin to twitch.

These symptoms, taken together, represent almost exactly a lesion of the motor centre of the face. A circumstance which often renders the diagnosis more difficult is the fact that these attacks are frequently limited to the epileptiform stage, and are unaccompanied by any other hysterical symptoms.

This patient had at one time sixty-two attacks in the space of an hour and a half, but at present the attacks are separated by well-marked intervals, and there are other symptoms such as catalepsy, hallucinations, etc., which render the diagnosis of hysteria easy. The absence of paralysis of the members affected is also a sign of great value, and, as it is almost always present in true Jacksonian epilepsy, but very rare in the hysterical form.

Still another very important symptom, is that the urea is increased in the urine, which is voided after an epileptic attack, but is diminished in the hysterical condition—*Jour. Nerv. and Mental Disease.*

The Alterations Found in the Peripheral Nerves of Progressive General Paralysis.—The histo-pathological changes occurring in the peripheral and intra-muscular nerves, and to a greater degree in the trunks of the cranial and spinal nerves, consist of a parenchymatous neuritis of peripheral origin. In the various spinal nerves—motor, sensory and mixed—not only are the trophic centres normal, but the anterior roots, and that portion of the posterior roots between the post-spinal ganglia and the junction with the corresponding anterior roots, are likewise normal.

2. The intensity of the alterations is in direct ratio to the distance from the nerve centres.

3. The different etiological factors (alcoholism, syphilis, etc.), and to the various complications (tuberculosis, etc.), must be attributed in all probability the unequal distribution of the lesions, as found in the muscular and cutaneous nerves. How much of these alterations depend upon progressive paralysis and to the various complications is very difficult to determine.

4. The existence of these simple and degenerative atrophies of the peripheral nervous system is constant. The mode of origin is unknown. From the fact that the nerve endings are in advanced stages of degeneration, while the nerve centres and the adjacent nerve roots are unimpaired, it is most probable that the lesion is comparable to an ascending neuritis, beginning at the periphery and ascending centrally.—(Dott. Roselino Colelia in *Annali di Neorologio.—Journal Nervous and Mental Diseases.*

The Centre for Hearing.—A case of no little interest and importance in this connection is recorded by Dr. C. K. Mills in the current number of *Brain*. The patient, a woman of forty-six, was admitted to the hospital in August, 1891. Her history made it probable that she had suffered from specific disease. She was right-handed. Fifteen years before she had a "stroke," which left her word-deaf, but not paralyzed. She could hear musical and other sounds, but she could not understand words; yet she could apparently read and understand a paper, although in an attempt at reading aloud she made a jumble of the words, and a similar imperfection was present during ordinary attempts at speaking. She was able to write, but wrote wrong words. Six years later she had another stroke, affecting the left side of the body, and leaving her partially paralyzed on that side; then her hearing was much impaired, so that there was not only word-deafness, but deafness also for ordinary sounds. Her condition, when examined by Dr. Mills, was one of almost complete helplessness. It was impossible to make her understand what was said to her, and after repeated tests the conclusion was come to that she was totally deaf. She died of exhaustion, and at the necropsy the left superior temporal convolution was found to be much atrophied, except anteriorly. In the posterior fourth of the second temporal convolution and the parallel fissure was a depression or cavity, at the bottom of which was a small mass of shrivelled tissue, which was regarded by Dr. Mills as the remains of an old patch of softening. The rest of the temporal lobe was normal, but there was a considerable amount of atrophy around the ascending branch of the Sylvian fissure and the bases of the two central convolutions, as well as in the hinder part of the third frontal. In the right hemisphere was an old hæmorrhagic cyst, completely destroying the first and almost completely the second temporal gyrus, the island of Reil, and the convolutions behind, as well as part of the ascending convolutions, and of the central substance. The auditory nerves were atrophied, and the striæ acousticæ are said to have been invisible to the naked eye. From this case Dr. Mills thinks he is justified in contending that the centre for word-hearing is situated in the hinder thirds of the first and second temporal convolutions; and is possibly restricted to the second; and that although the auditory cerebral arrangements have their chief development in the left temporal lobe, destruction of the opposite centre is necessary in order to abolish hearing entirely. Several minor conclusions are also drawn, but the above are the most obvious.—*Lancet.*

Advances in Physiological Chemistry.—The progress of physiology and physiological chemistry gives every now and then a sharp turn to our methods of viewing and treating disease. Thus, for example, in times past the profession has starved fevers, then it has fed fevers, now it is inclined to water them.

Perhaps in no direction have medical views changed more than in regard to the dieting and feeding of the sick, and to the medication of nutritional disorders. For two decades a vast deal of attention has been paid to the subject of making things easy for the stomach. Pepsin, ptyalin, trysin, peptones, peptonic pills, digested and half digested milk and beef, have been prescribed in enormous amounts, and no doubt with some benefit.

But there is a possibility that too much of this sort of thing is done, and that much of the supposed help to digestion given by prepared foods is fanciful. It has been demonstrated beyond any doubt that albumin is absorbed from the rectum and stomach without first being changed into peptone. It is known that the peptones must be changed into serum-albumin before they enter the blood; and finally, there is good ground for believing that all the proteid matter which is used in the building up and repair of tissues comes from albumins which escape being converted into peptone in the alimentary tract. Peptone supplies force, unchanged proteids supply tissue.

A good deal of medication has been based on the supposed fact that the secretions of the intestinal tract are alkaline. The studies of Macfayden, Woricki and Sieber show that this is not entirely true, for the secretion, as found in the lower part of the small intestine, is uniformly acid.

A very important and dominant idea in practical medicine is that the tissue changes of nutrition and function are chiefly oxidations. Hence we insist on fresh air, exercise, and abundant supplies of oxygen. But it is known that synthetic processes also occur in the processes of digestion and absorption, as well as in tissue-making. In digestion, for example, hydration is an important factor, and in the absorption of fats there is a synthesis of fatty acids and glycerine, so that as a result, neutral fats alone enter the lymph. The investigations of chemists have also shown that the liver cells do synthetical or constructive as well as oxidizing work. The old view of Liebig, that our bodies are mainly furnaces, is not, therefore, strictly true, and we are learning to-day that rest is as important as exercise in securing improvement in nutritive functions.

These views, which are in part suggested by an able address of Dr. V. C. Vaughan, of recent progress in physiological chemistry, show that certainty has not yet been reached in our knowledge of diet, digestion and nutrition, and that the modern physician must keep ever alert to the progress made in the physiology and chemistry of the human body.—*Medical Record.*

A Suggestion with Regard to Spraying the Nasal Cavities.—Dr. F. A. Burrall, of New York City, writes: "As an aid to thorough spraying of the nares, I have formulated the following method, which originated from a suggestion made to me by a patient on whose nasal cavity I was using the upward spray: Direct the patient to inhale deeply, and place the tip of the atomizer behind the uvula without touching the posterior pharyngeal wall. Then the patient is to close his lips upon the tube and exhale through the nose. This carries the spray well forward upon the walls of the nasal cavities, and when an oily solution is used, such as the extract of pine needles in benzoinol, the volume of spray issuing from the nose resembles that of the air from the nostrils on a frosty morning. This process makes the spraying of the posterior and anterior nasal cavities more thorough than can be done by an ordinary application. It is a method worth mentioning, as there may be some physicians to whom the idea has not occurred, and they will find it serviceable." —*Medical Record.*

Darwinism so far a Failure.—Darwinism has a strong foe in Professor Virchow. The following is an extract from his address on the subject delivered before the Anthropological Congress in Vienna: "Since the Darwinian theory of the origin of man made its first victorious mark, twenty years ago, we have sought for the intermediate stages which were supposed to connect man with the apes; the proto man, the *pro anthropos*, is not yet discovered. For anthropological science the *pro anthropos* is even a subject of discussion. At that time in Innspruck the prospect was, apparently, that the course of descent from ape to man would be reconstructed all at once; but now we cannot even prove the descent of the separate races from one another. At this moment we are able to say that among the peoples of antiquity no single one was any nearer the apes than we are. At this moment I can affirm that there is not upon earth any absolutely unknown race of men. The least known of all are the peoples of the central mountainous district of the Malay Peninsula, but otherwise we know the people of Terra del Fuego quite as well as the Esquimaux, Bashkirs, Polynesians, and Lapps. Nay, we know more of many of these races than we do of certain European tribes; I need only mention the Albanians. Every living race is still human; no single one has yet been found that we can designate as simian or quasi-simian. Even when in certain ones phenomena appear which are characteristic of the apes —*e. g.*, the peculiar ape-like projections of the skull in certain races—still we cannot say that these men are ape-like." —*Medical Record.*

The Puerperium as a Factor in the Ætiology of Multiple Neuritis and Degenerations of Nerve Tissue.—H. Handford, M.D., in the *British Medical Journal*, November 28, 1891, reports two cases of multiple neuritis, both probably of alcoholic origin, where the onset seemed most clearly to be determined by childbirth. He mentions a third case where the exact diagnosis was more difficult, but its onset immediately following confinement was equally clear. After quoting Gowers' suggestion in this connection that "the tissue health is lowered, and hence slighter causes excite neuritis," he says the rapid progress of tabes dorsalis, and the frequency of optic atrophy in it when sexual relations are actively maintained, has been frequently noted. The relation of child-bearing is probably of a similar nature, and it is not suggested as a sufficient cause *per se.* On the other hand, child-bearing is a common occurrence, and the neuritis may have been a coincidence, but multiple neuritis is a comparatively rare disease, and for three out of six or seven cases, in both sexes, to commence with childbirth seems an undue proportion. The author then asks "is the influence of childbirth one of the factors which render alcoholic neuritis so much more common in women than in men, while drinking habits are more prevalent in the latter?—*Journal Nervous and Mental Diseases.*

The Sulphate of Duboisia in Mental Diseases.—Preiniger has used the sulphate of duboisa as a calmative and hypnotic in mental affections with good results. The action of this agent much resembles that of hyoscine, while its inconveniences when given in too strong a dose are the same. When administered to an insane patient, sleep sets in in from ten to twenty minutes, and lasts from one to eight hours. Sometimes the sleep is of short duration, yet, on awakening there persists a somnolent condition and prostration which more or less takes its place. If the dose be larger than two and a half to three mgrms, the patients become agitated, the extremities jerk, the pulse becomes accelerated, the respiration increases in frequency, and the temperature rises—even hallucinations may set in. The peculiar idiosyncrasies of patients with regard to occustecination, and its intensity of action should be borne in mind. The maximum dose for subcutaneous use, and which should not be increased, is two mgrms. Administered by the mouth it sometimes does not act.—*Le Bulletin Médical.*—*Journal Nervous and Mental Diseases.*

The Toxic Action of Impure Chloroform.—It has been an axiom for years that in the administration of chloroform for anæsthesia the purified drug only should be employed. This has been founded in part upon observation and in part upon a knowledge of the irritative effects of some of the impurities in commercial chloroform. Prof. Pictet's recent method of refining chloroform, mentioned in the *Journal* for December 12, gives a very pure chloroform and an impure residue. Dr. Rene du Bois-Reymond has recently published in the *British Medical Journal* the results of his experiments upon the physiological action of the residue as compared with that of the purified drug, cardiographic tracings being made of the tracings of the hearts of frogs placed under covered dishes with both liquids, and manometric and expiratory tracings being made from rabbits inhaling the drugs through a tracheal canula.

These experiments corroborated those already made on the action of chloroform in general, but, on comparing the pure with the impure drug, no difference was found in the shape of the pulse waves or in the frequency of respiration. With the residue at the close of experiments, the pulse was higher than with pure chloroform; and when respiration stopped, the blood pressure was higher after inhaling the pure than the impure drug. Furthermore, the latter caused stoppage of respiration much more quickly than the former. Pure chloroform is much more volatile than the impure, and the purer the drug the less the quantity required for anæsthesia and the less risk of that respiratory failure which the Hyderabad Commission concluded was the cause of death in chloroform administration.—*N. Y. Medical Journal.*

Implantation of Large Fragments of Decalcified Bone.—A young man, suffering from chronic tubercular ostitis of the tibia, was treated by Le Dentes (*La France Medicale*) by extirpation of three inches of the tibia and fibula, and a portion of the upper surface of the diseased astragalus, replacing them by a single three inch fragment of decalcified bone from a calf. Ultimately a movable articulation upon the astragalus was established, and the patient was able to walk several miles without fatigue, his foot receiving only lateral support from a dressing containing thin boards. The bone to be used is removed from a freshly killed calf, stripped at once of its periosteum and marrow, cut into pieces of suitable size, and placed in ten per cent. hydrochloric acid for eight days, rinsed in pure water, immersed in a sublimate solution for twenty-four hours, and then stored in iodoform and ether.

The advantage of the single fragment over Senn's "chips" is that it affords support to the member during the growth of the bone granulations. Favorable conditions are, of course, youth of the subject and the possibility of extirpating *all* the diseased tissue. It is, of course, necessary that either a thin sheath of live bone or healthy periosteum be preserved. Its greatest usefulness will be in destructive lesions and operations upon the skin; resection of small bones, the seat of tuberculosis; resection of long bones for disease tumors, and in complicated fractures; and the radical cure of pseudo-arthroses.—*Indiana Med. Journal.*

THE GRIP-LUNG.—The grip-lung, according to Elliott, has a long and very varying condition of passive blood stasis unaccompanied by râles. If resolution occurs within three or four days, it is accompanied by large mucous râles, and no time is given for the slow appearance of bronchial breathing or bronchophony; but during the long continuance of the blood stasis an exudation occurs, increasing slowly, which will give, in time, some bronchophony and bronchial breathing, but never so complete as in pneumonia. Resolution never occurs in these cases with the suddenness that characterizes it in acute pneumonia; the condition passes off as gradually as it formed. The sharp, clear cut and sudden phases of the pneumonic attack separate it clearly from the obscure, irregular and slow phases of the grip-lung. —*Weekly Medical Review.*

THE EFFECTS OF SULFONAL UPON THE CIRCULATION.—The conclusions arrived at by Dr. Sgobbo Francisco, of Naples (Annali di Neorologi, Fas. II, 1891), are:

1. That sulfonal is a good hypnotic.
2. That given in doses of 3 grams it exerts an influence upon the heart and blood vessels, reinforcing the systole and increasing the vascular tone. This action upon the blood vessels is not continuous, for after a certain time there is a dilatation, and a progressive loss of elasticity, beginning first in the vessels of the brain, then extending to the periphery.—*Jour. Nerve and Mental Disease.*

HISTOLOGICAL ALTERATIONS OF THE NERVOUS CENTRES PRODUCED BY ELECTRICAL SHOCK.—Magini, of Rome, experimented upon dogs, cats, pigeons, white mice and rabbits, employing the potential electrical apparatus of Winsurth. After examining the brain cord and peripheral nerve carefully he arrived at the following conclusions:

1. That death by electrical shock, where there is no external or appreciable internal lesion, is produced by a profound alteration taking place in the ganglion cell of the cerebro-spinal system.
2. That such ganglion cells show great changes in size, being shrivelled and atrophied, deprived of nucleus and nucleolus, and accept an intense stain.
3. That the electrical shock, oft repeated, favors diapedesis.—*Jour. Nerv. and Mental Disease.*

DECISIONS CONCERNING ACCIDENTS.—From the *New York Independent* we quote the following decisions about "accidents": In one case the sufferer claimed for compensation as provided, the principal sum insured for "the loss of two entire feet"; he had his feet still, attached to his body and uninjured, but their use was destroyed, as a consequential injury. He had been accidentally shot in the back, producing a paralysis which reduced his feet to the condition of useless appendages.

In another case compensation was claimed for "loss of both eyes." The hair splitting answer might have been that the man had not lost both eyes, for in fact he had lost by the accident only one. But the further fact was that he had only one eye to lose, having had only one when he was insured, as the company's agent was aware; so the expression "loss of both eyes" was decided to be equivalent to "entire loss of eyesight." Whether eyesight which could be lost or put in jeopardy in a single eye ought to be insured at the same rate as on the usual basis of two eyes the court did not inquire; it assumed that what the agent knew the company knew.

Accident policies properly provide against liability in case accident occurs while the party is engaged, temporarily or otherwise, in an occupation more hazardous than the one he was engaged in when insured; a bookkeeper, insured as such, of course has no right to go to repairing church steeples as an occupation. But suppose he repairs them for amusement? In a case of accidental killing while gunning, it was held that this was amusement, not "occupation," and that defense on the plea of changing occupation was not good. We recall a similar case where a man insured as a "gentleman" got hurt while working at a lathe or like implement; it was held that he was still in the "occupation" of gentleman notwithstanding. It may be well that the person who ventures to do, in an amateur or dabbling way, things which are in their nature hazardous, incurs more danger than the experienced person who does those things as his occupation. This is true of some things, and probably not true of others; for instance, the amateur steeple climber would be rather more in danger than the professional whose nerves have become accustomed, but the amateur at a circular saw is rather more careful to keep his fingers at a good distance than is the one who is "used to it."

In a case where the insured was struck and killed while hurrying across the track at a railroad station and doing his best to reach the platform, aided (or impeded) by shouts to "look out for the express," it was held that the jury might decide the question of fact whether this was negligence; moreover, that if a man of ordinary prudence would do the same in those circumstances, his death was not by a "voluntary" act of his own; moreover, that such a crossing of a track is not forbidden by the policy prohibition of "standing or walking on the roadbed or bridge of any railway."

Again, if the person injured while riding on the platform or step of a railroad car can show that by reason of the crowd on the train there was no safe place to ride, and the conductor permitted him to remain there, he is not debarred from recovery by the policy prohibition.

In a case where the insured met his death while trying to save two persons who were crossing a track it was held that this was not covered by the stipulation that the insurance "shall not extend to or cover voluntary exposure to unnecessary danger."

In a case where hernia followed the accident and a surgical operation to reduce it resulted in peritonitis and death it was held that the accident was the proximate cause of death, because the operation was necessary, death seeming to be inevitable without it.

HYDRIODIC ACID IN THE TREATMENT OF INFLUENZA.—Wm. H. Van Gieson, M.D., in a contribution to Notes on New Remedies, writes:

Owing to the prevalence of influenza at the present time, anything having a bearing upon the successful treatment of this widespread malady must be of value to the profession. Having met with most excellent results during two epidemics in the treatment of the bronchial complications accompanying this disease, the following notes have been written, with the hope that the treatment will [illegible] efficacious in the hands of other physicians.

One of the most distressing symptoms of this peculiar disease is the dry, racking cough which almost invariably accompanies it. In other bronchial affections the cough is often useful in removing bronchial accumulations, but it is not so in influenza. The cough is out of all proportion to the amount of inflammation of the mucous membrane. This constant mechanical irritation tends greatly to increase the congestion of the upper air passages, and greatly increases the liability to a bronchitis or subsequent pneumonia. The violent paroxysms of coughing are very exhausting, and the patient is often completely exhausted after having passed through one. Vomiting is also apt to be induced by the prolonged fits of coughing, thus tending also to weaken more the already greatly debilitated patient. After the cough has persisted for some time, the muscles of respiration become very sore and painful, and cases have frequently been seen where hernia has been produced by the cough paroxysms.

During the epidemic of 1889 I tried all the various expectorants and cough mixtures with but poor results. Some of those containing opium or its alkaloids seemed beneficial for a short time, but as soon as they were discontinued the cough returned, and in some cases remained troublesome for months after. During the last part of the epidemic of that year, I began the use of hydriodic acid in the treatment of these bronchial complications, meeting with excellent results. During the epidemic of 1890, and so far during the present one, I have used the acid most extensively, with uniformly good results. Very soon after its administration the cough loses its dry, rasping character, becoming moist, and with the paroxysms farther apart. It is very seldom that a patient is seen who has been obliged to vomit from the violence of the cough paroxysms after the acid has been administered for twenty-four hours. It has been my practice to prescribe the syrup of hydriodic acid in teaspoonful doses every two or three hours, well diluted in water, gradually increasing the interval of administration as the desired effect is obtained. The syrup has a pleasant taste, and is easy of administration, which is a valuable feature. Having tried the syrup supplied by different manufacturers, and after having on several occasions had a syrup dispensed which contained free iodine (once with nearly fatal results to the patient), I tried syrup of hydriodic acid, and in no case has it ever disappointed me—proving unalterable and permanent in composition, and satisfactory in therapeutic effect.

The acid is also beneficial in the other catarrhal complications accompanying influenza, such as coryza, catarrh of the digestive tract, etc. In fact, it seems to have a decided action upon all symptoms of the disease. The syrup can be administered plain, or in combination with most of the syrups and tinctures. The combination of the syrup with the tr. of cardamoms and codeia makes a very palatable and efficient mixture.—*Medical Age.*

ZINC GLUE FOR SURGICAL DRESSINGS AND OTHER PURPOSES.—Treutler suggests the following formula: Oxide of zinc, 10 parts; gelatine, 30 parts; glycerine, 30 parts; and water, 30 parts. This paste is thickly applied and rubbed into the muslin or gauze forming the bandage. A thinner preparation contains 20 parts of gelatine and 40 parts of water.

THE *National Medical Review* is the name of a new medical journal of which "No. 1 of Vol. I" has just made its appearance. It is edited and published by Charles H. Stowell, M.D., formerly professor of histology at the University of Michigan, founder and for several years editor of the *Microscope*, and now practicing medicine in Washington, D. C. The new journal makes a good appearance, its title page being especially attractive.

PRIMARY TUMORS OF THE HEART.—Dr. Jürgens (*Berlin. klin. Wochenschr.*) publishes four cases of primary tumor of the heart—a rare affection, in regard to which knowledge is still limited. Case 1 is that of an infant aged 10 months, in whose right auricle was found a growth about the size of a cherry. It took origin between the superior vena cava and the insertion of the anterior flap of the tricuspid valve, and on microscopical examination proved to be a simple fibroma. The endocardium of both ventricles here and there showed some fibrous thickening. No symptoms of heart disease were detected during life. Case 2 is that of a man aged 50, who, although free from heart symptoms during life, was found post-mortem to have a polypoid fibro-myxoma of his left auricle. The tumor, as large as a walnut, was attached to the middle of the anterior wall and hung down 1½ inch into the mitral orifice. Microscopical examination showed the structure to be that of a highly vascular pigmented fibro-myxoma, the pedicle containing some striated muscular fibres. Case 3 is that of a man aged 36, who, having died suddenly, was found at the necropsy to have suffered from a fibro-sarcoma of the right auricle and tricuspid valve, which caused considerable stenosis of the tricuspid orifice. No other pathological condition was discovered. Case 4 is that of a woman aged 19, who also died suddenly, and whose heart was found post-mortem to contain numerous small tumors buried in the wall of the right ventricle. These, on microscopical examination, proved to be gummata infiltrating almost the whole of the right side of the heart. The endocardium, the septum, and especially the region of the tricuspid valves, were also extensively infiltrated, the tricuspid orifice forming a rigid opening, admitting only two fingers. The walls of the arteries and of some of the veins of the right ventricle showed well-marked sclerosis, while many arteries lying in the connective tissue new growths were completely occluded.—*Supplement British Medical Journal.*

PREPARING THE SKIN FOR ANTISEPTIC OPERATIONS.—Dr. F. W. Langdon, of Cincinnati (*Lancet-Clinic*), calls attention to the value of benzine as a solvent of oily secretions in the preparation of skin areas for antiseptic operations. An agent that can penetrate and disinfect the pores and follicles of the region to be operated upon, has advantages not possessed by any of the watery solutions in common use.

DETAILS AS TO THE USE OF OINTMENTS.—There are perhaps few subjects in respect to which custom hangs on us with a more heavy weight than in the directions which we give to our patients as to the use of ointments. In nineteen cases out of twenty the formula is, "Take the mixture three times a day, and apply the ointment at bedtime." Now in a large number of cases the direction ought to be three times a day, at least, for the ointment also. Further, the application ought to be each time a definite inunction, occupying a few minutes for each spot, and not a mere anointing. It is astonishing what may be done in many skin diseases by appropriate ointments used in this way. To order simply an anointing on going to bed is to do little more than nothing. Nor is it much better to apply the salve on lint; what is needed is patient and repeated inunction. If the patient will take the trouble three times a day to undress before a warm fire and take his time to a patient inunction, he may in many cases dispense with the disagreeable condition of keeping the skin always greasy.

I am in the habit of employing these frequent inunctions not only in cases curable by mercurial ointments, but in those also such as psoriasis, requiring tar or chrysophanic acid. In a little girl now under treatment for psoriasis, arsenic definitely disagreed, and the spots persisted. I disused the arsenic, made the chrysophanic acid ointment stronger, and insisted upon the nurse using it by inunction three times a day. The result was that the health improved, and the spots rapidly disappeared.

Mercurial Lotions Sometimes Preferable to Ointments.—A gentleman wrote to me: "You may remember my having called on you two or three months ago on account of eczema. Your first prescription not having eradicated it, the second, bi-chloride of mercury, has settled the matter, for it is gone."

As it is an unusual thing to cure eczema with the bi-chloride, I took the trouble to look up my notes of the case, and found that my patient was an old gentleman of seventy, who had consulted me on Sept. 14th, for what I then called "Eczemaporrigo of the chin, with a honeyed crust." He was wearing his beard, and the hairs were matted together. It had been present then two months, and had persisted in spite of treatment. I prescribed for him, in the first instance, an ointment containing tar and the white precipitate. Two months later, on Nov. 10th, I found him but little better, and noted that the eruption was still moist and distinctly pustular. It was then that I prescribed the bi-chloride wash which rapidly effected a cure. The ingredients of the latter were as follows: Four grains of bi-chloride of mercury, two ounces of spirits of wine, half an ounce of glycerine, and twelve ounces of rose water. The directions were to bathe the roots of the hair freely night and morning, and, after drying, to apply the ointment. The ointment was the same which had been used before alone, and which did not cure. This case proves that in some instances solutions of mercury are more efficient in stopping the inflammatory process than are ointments.

The Treatment of Gonorrhœa.—My treatment of gonorrhœa in all stages has for long been very monotonous. Almost without regard to stage or degree of severity, I prescribe the same remedies. I have long ago laid aside the traditions of my student days which taught that salines only should be used in the acute stages, and that abortive plans were dangerous. I always use abortive measures, and mostly, I believe, succeed. At any rate, I never encounter ill consequences, and complications are rare. My prescription is a partnership of three different remedies, and it is, I believe, important that they should all be used. First an injection of solution of chloride of zinc, two grains to the ounce; next sandal-wood oil capsules, and, lastly, a purgative night dose with bromide of potassium. The injection is used three or four times a day, the capsules (ten or twenty minims) taken three times a day. The ingredients of the night-dose are three drachms of Epsom salts, and half a drachm of bromide of potassium. It is, I believe, the action of the last named in preventing congestion of the parts which makes the abortive measures safe. Moderate purgation and entire abstinence from stimulants are essential. If the case is very acute and attended by swelling of the corpus spongiosum, I sometimes prescribe tartar emetic or tincture of aconite, but it is very seldom indeed that these are necessary. If the patient be well purged there is no risk whatever in an abortive treatment from the day that he comes under treatment. The risk of orchitis, prostatitis, cystitis, etc., comes in cases which have been allowed to develope rather than in those treated abortively. I should as soon think of delaying to use local measures in gonorrhœa as I should in purulent ophthalmia.

Salol and Arsenite of Copper in the Diarrhœa of Children.—Mensi (Riv. gen. Ital. clin. Med., Sept. 15, 1891) speaks most highly of the efficacy of salol in the acute or chronic diarrhœas of children. According to his experience, in the treatment of twenty-seven cases he finds that the drug in a relatively short time arrests the intestinal flux, calms the colic and tenesmus, and restores the normal functions of the bowel. The medicament is well borne in daily dose of twenty-five or fifty c. g. to two grams, according to the age and gravity of the case. It does not irritate the stomach, and produces no toxic symptoms. On the other hand, he has found that arsenite of copper possesses no immediate advantages in the treatment of diarrhœa, and the results obtained have no superiority over those effected by other drugs.—*Medical Age.*

Peroxide of Hydrogen as a Disinfectant of Water.—Dr. Altehoefer, after giving references to the literature of the subject, gives his own researches on the disinfective power af H_2O_2 dissolved in water. He finds that the addition of 1 per 1,000 to ordinary drinking water, to drinking water containing sewage, or to water containing typhoid bacillus or cholera bacillus, is quite sufficient to destroy the various saprophytic and pathogenic organisms contained under these conditions, if it is allowed to act for a period of twenty-four hours. It is specially valuable for the disinfection of drinking water because it does not affect the taste, does not alter the color, and in the proportion mentioned is perfectly innocuous. As regards cost, he calculates that sufficient drinking water—say 10 litres— may be sterilized by means of H_2O_2 at a cost of about 2d. per diem.—*Quarterly Therapeutic Review.*

The Phenomena of Rancidification.—M. Ritsert has published in the *Revue Scientifique* a very interesting paper describing the experiments made by him to solve the question of the rancidification of fats. He first directed his attention to the microörganisms always present in fats. Isolating these and sowing them upon sterilized fats, he found that no acids were produced, and further that subsequent enumeration of microörganisms demonstrated that these not only did not grow and increase in numbers, but that most of them actually perished when placed in contact with sterilized fats. The inoculation of sterilized fat with rancid fat produced the same negative results. These experiments eliminated the microbian theory of the origin of rancidity. On exposing the inoculated fats to the direct sunlight M. Ritsert noticed that the bacteria, etc., died more rapidly than when the direct light was excluded, but at the same time the fat became rapidly rancid. Light, therefore, seemed to be a direct agent in rancidification. This point fixed, the experimenter next turned his attention to the atmosphere, or the gases which constitute it, and investigated whether it or they played any rôle in the phenomenon. The net results of his experiments proved that light without air, and air without light, alike are powerless to produce rancidification, but that the union of the two factors, light and air, is necessary for the phenomenon. Nitrogen and oxygen alone, either or both of them have no effect *in the dark* upon fats, and nitrogen alone none in the light, but oxygen and light effect rancidification rapidly. Rancidity, then, is an oxidation, but one that is never produced in the absence of light. Hence, fats kept in absolute darkness will not become rancid.—*National Druggist.*

Facial Spasms Cured by Intranasal Treatment.—Dr. Felix Peltesohn (*Berlin. klin. Wochenschr.*) believes that it is of great importance to bear in mind the possibility of a nasal origin in cases of convulsive tic, and to direct the treatment accordingly. In proof of this he records the following case: A young man, aged twenty, otherwise healthy, had since the age of fourteen been affected with a twitching of the lower eyelid on the left side. The twitching used to get better and worse without apparent cause, and at times would disappear altogether. A short time previous to coming under the author's care the spasmodic affection had extended to the whole of the left side of the face. The spasm was unattended with pain, but was excessively annoying to the patient, reducing him almost to a state of desperation. It did not cease even in the night, so that it frequently woke him from sleep. He complained also of a stoppage in the nose, had a reddish discharge from the nostril, and a nasal twang of voice. It was these latter symptoms which caused him to seek Dr. Peltesohn's advice. Rhinoscopic examination revealed a considerable swelling of the anterior end of the left inferior turbinated body. The surface of the tumor was covered with small elevations, like a raspberry, and pressure with a probe caused slight bleeding. When the tumor or other part of the mucous membrane was irritated with the probe it did not set up spasm, nor was the spasm relieved by cocainization of the mucous membrane. The tumor was removed by means of the galvano-caustic snare. From that day the spasmodic affection of the face ceased completely. The author has frequently seen the patient during the nine months which have elapsed since the operation, and there has not been the slightest return of the spasm.—*Supplement British Medical Journal.*

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Action of Yeast on Typhoid Bacilli.—Recently Dr. Springthorpe, at a meeting of the Victoria Branch of the British Medical Association, communicated a description of M. de Bavay's results of a series of observations and experiments on the saccharomyces, and their relation to typhoid bacilli. These saccharomyces were obtained from chyle which had escaped from the thoracic duct through an ulceration, and which appeared to possess very strong antiseptic and deodorising properties. After determining that the typhoid bacillus grew best in broth, and that milk was not a specially good medium unless it could be previously peptonized by other materials, M. de Bavay carried on a series of experiments to prove that yeast had the power of interfering with the growth of the typhoid bacillus when the two were cultivated *in vitro*. He found that the typhoid bacillus growing in an alkaline medium was much more virulent than that organism growing in an acid medium. He explains this on the assumption that the poison secreted by the organism is immediately precipitated in the alkaline medium, leaving the bacillus free to act, whilst in the case of the acid medium the poison is not precipitated, and eventually accumulates to such a degree that the organism which secretes it is itself poisoned. He found also that if he retained the sediment from an alkaline solution on a filter, and then dissolved it in a weak acid, he obtained an exceedingly toxic substance. From this he argues that as yeast is able to pass through the intestine comparatively unchanged, and as it develops a considerable quantity of acid in its growth, it should, if introduced into the intestinal canal, maintain a certain acidity in the contents, and so prevent the precipitation and storing up of the typhoid poison—a storing up which takes place when the secretion is allowed to remain alkaline. He also holds that if the food taken by the patient be saturated with yeast—which is a harmless organism—the typhoid bacillus can no longer develop in it, and is therefore very soon starved out, and he maintains that in consequence of this slow absorption of the acid into the system a kind of self-protective inoculation takes place; in fact, after injecting a mixture of yeast and typhoid bacilli, guinea-pigs which had shown slight signs of intoxication but had recovered were proof against large toxic doses of the poison. He describes an organism found in certain cases resembling typhoid which secretes a far more poisonous compound than does the typhoid bacillus itself, which, however, it resembles in many respects, although it develops rapidly on potato, forming an abundant wax-like covering. The colonies on gelatine are exceedingly minute; the bacilli are like those of typhoid but a little stouter; they are arranged in chains of two, three, and four, and have a serpentine motion across the field of the microscope; they stain readily, and are then very similar to the bacilli of septicæmia. Here, however, the poison appeared to belong to the class of albumoses, whilst the typhoid poison he considers to be a ptomaine. His conclusions are 1, that the action of yeast in the treatment of typhoid fever is principally due to the power which it has of secreting an acid, and of doing this over and over again, by which means it is able to render acid the contents of the intestines; 2, that when such an acid reaction exists, the poison secreted by the germ reacts upon the germs themselves and stops their growth; 3, that the action of yeast on the poison of typhoid differs according to whether it is pure or contaminated by bacteria; 4, that liquids impregnated with yeast are in a great measure protected against the depredations of typhoid bacilli, especially if such a liquid contains a fermentable sugar; 5, that these properties of yeast are not confined to one variety, but that they increase or diminish according to the power of assimilation and acid secretions of different varieties. Further, he has found that the typhoid bacilli, after repeated growth in peptonized broth, produce less poison, as it is necessary to use larger doses to produce the same effect.—*Supplement Brit. Med. Jour.*

The Law of Periodical Function in Women.— Ott (*Wiener Med. Presse*) reports some observations, not exclusively upon menstruation, but upon the various vital processes occurring in women during the period of generative activity. These processes correspond in time to the hæmorrhage, are associated conditions, with a dependent relation to it. Observations upon temperature, pulse and blood pressure indicated that vital activity attained its maximum preceding the menstrual period, and declined at its commencement or immediately before. Sphygmographic tracings, muscle strength and excretion of urea suffer similar variations Observations were made at a certain hour each morning during prolonged periods, sometimes extending into the menstrual periods, upon heat radiation, muscle strength, pulmonary capacity, inspiratory and expiratory force, the tendon reflexes, in healthy women placed under the same condition; and a physiological functional periodicity of the female organism was demonstrated. To establish the connection between menstruation and this periodicity of function, it is necessary to determine if the rhythmical variations are independent of menstruation. A large number of observations made by Dr. Schichareff, under the guidance of Ott, upon pulse, temperature and blood pressure in girls between the ages of 8 and 13, and in women between the ages of 58 and 80 years, showed that no such periodical variations of physiological functions occur in females during the periods in which they are not capable of conceiving, and in which they do not menstruate.

Beer-drinking in its Relation to Heart Disease.—In Munich, where the average amount of beer annually consumed reaches 565 litres *per capita*, not only is heart disease very prevalent, but the duration of life among those engaged in the brewing trade is very much less than that attained by those not so engaged. This fact is shown by the average duration of life among the general population (53.5 years), those who keep alehouses (51.35 years), and the brewers (42.33 years).—*Blätter für klin. Hydrotherapie*, No. 4, 1891.

Nasal Polypus and Hysteria.—Dr. Marcel relates the case of an hysterical girl of 23, who for seven years had suffered from frequent attacks of convulsions with loss of consciousness. The convulsive seizures were preceded by an aura starting like an itching or tickling in one side of the nose, and extending to the eyelids, and thence to the throat, where it caused a sense of suffocation. A polypus was discovered in the corresponding nasal fossa, and upon its removal the attacks ceased.—*Medezina*.

Leucorrhœa is, according to Dr. Louis Bauer, often due solely to constipation, hence clearance of the bowels of their fæcal contents is in many cases the chief and most effective treatment of that troublesome disorder.

Criticism on Some of the Lesser Gynecological Manipulations.—Croom (*Edin. Med. J.*) says three factors seem at work in modifying our opinions very considerably with regard to many of the minor gynecological operations and appliances which have been in constant use. These three factors are: 1, The improvement in and education of practitioners in the simple manual examination of the pelvic organs; 2, an improved and revised pathology of the intravaginal portion of the cervix; and 3, perhaps especially the increased knowledge which abdominal section has thrown upon the contents of the pelvis. The fact has been forced upon the author that a large number of cases where abdominal operations have become imperative have been distinctly traceable to interference, more or less marked, with the uterus. He condemns in unmeasured terms, the speculum, the sound, the intra-uterine stem. He extols dilatation of the cervix and curetting.

He calls attention to the three following rules:

1. That the diagnosis of all pelvic and most pelvi-abdominal conditions should be made slowly and gently with the unaided hands, and upon the examination thus made the practitioner should train himself to rely.
2. That no mechanical aids to sight or touch should be employed, except under exceptional circumstances..
3. That as a large proportion of the risks and accidents of *minor* gynecological operations are due to a want of appreciation on the part of the physician of the condition of the uterine appendages, no operation, however trivial, should be undertaken until their state and relations have been ascertained with as much accuracy as possible.

Massage for Constipation of Infants.—M. Carnitsky advises abdominal massage as the best treatment for constipation in infants. The skin should be smeared with vaseline in order to avoid irritating it and the right and left flanks should be the parts selected for the principal treatment, because the large intestine is the sluggish part in infants. During the séance, which should last four or five minutes, it is best to nurse the child so as to keep it quiet and avoid contraction of the abdominal muscles.—*Journal de la Santé.*

Enteric Fever in an Infant Nine Months Old.—Fuller (*Lancet*, No. 3548, p. 1038) has recorded the fatal case of an infant, nine months old, that presented manifestations of irritability and dulness, with diarrhœa, tympanites, and elevation of temperature. At the autopsy, though the spleen was not enlarged, Peyer's patches were found swollen above the surface of the mucous membrane, some of the lower ones beginning to ulcerate. The adjacent intestine was injected. The mesenteric glands were enlarged and the solitary glands of the cæcum were abnormally prominent. In the same house in which the infant lived, an older child of eighteen months, as well as a woman, presented symptoms similar to those of the infant.

Guarana in Leucorrhœa—Pharmacology of the Newer Materia Medica.—A respectable married lady (Mrs. A. E., between twenty-five and thirty years of age), having been for some two years on the decline with uterine and vaginal troubles, who had been treated and had the advantage of the best medical talent, but was relieved only temporarily at times, called on me for treatment, and having prescribed for her, without anticipating anything very serious, or learning all the facts, she got but partial relief. I then made a careful examination, and learned all, as follows: Leucorrhœa of long standing, vesicular vaginitis, very sensitive, painfully contracted, so that a small tube of syringe gave great pain inserted; perfectly impotent, and incapacitated from enjoying the marital relations, etc. Prescribed guarana internally, and as a local application (after cleansing vagina with castile soap and warm water).

℞. Salicylic acid, gr. xx
Glycerin, ℥, M.

—*Archiv. of Gynecology.*

The *Bacteriological World* has been removed from the State University at Columbia, Mo., to Battle Creek, Mich., where its editor, Dr. Paquin, has assumed control of the new laboratory of hygiene at the Battle Creek Sanitarium.

Immunity and Infection.—Dr. A. C. Abbott, in an interesting paper in the *Medical News* on some of the more important contributions to medical literature on the subject of immunity, describes briefly the work recently done by several experimenters. As the result of this work, he offers the following as the present state of our knowledge of immunity and infection:

Of the hypotheses that exist for the explanation of immunity, that which assumes acquired immunity to be due to reactive changes on the part of the tissues has received the greatest support. Immunity is most frequently seen to follow the introduction into the body of the products of growth of bacteria that in some way or other have been modified. This modification may be artificially produced from the products of virulent organisms, and then introduced into the tissues of the animal; or the organisms themselves may be so treated that they are no longer virulent, so that when introduced into the body of the animal they eliminate poisons of a much less vigorous nature than is the case when they possess their full virulence.

Immunity following the introduction of bacterial products into the tissues is not the result of the permanent presence of these substances *per se* in the tissues, or to a tolerance acquired by the tissues to the poison, but is probably due to the formation in the tissues of another body that acts as an antidote to the poisonous substance. This protecting proteid that is eliminated by the cells of the tissues need not of necessity be antagonistic to the life of the organisms themselves, but in some cases must be looked upon more as an antidote to their poisonous products.

In the serum of the normal circulating blood of many animals there exists a body that is capable, outside of the body, of rendering inert bacteria that, if introduced into the body of the animal, would prove infective.

In many instances, infection may be looked upon as a contest between the bacteria and the tissues, carried on on the part of the former by the aid of the poisonous products of their growth, and resisted by the latter through the agency whole of the left side of the face. The spasm was unattended with pain, but was excessively annoying to the patient, reducing him almost to a state of desperation. It did not cease even in the night, so that it frequently woke him from sleep. He complained also of a stoppage in the nose, had a reddish discharge from the nostril, and a nasal twang of voice. It was these latter symptoms which caused him to seek Dr. Peltesohn's advice. Rhinoscopic examination revealed a considerable swelling of the anterior end of the left inferior turbinated body. The surface of the tumor was covered with small elevations, like a raspberry, and pressure with a probe caused slight bleeding. When the tumor or other part of the mucous membrane was irritated with the probe it did not set up spasm, nor was the spasm relieved by cocainization of the mucous membrane. The tumor was removed by means of the galvano-caustic snare. From that day the spasmodic affection of the face ceased completely. The author has frequently seen the patient during the nine months which have elapsed since the operation; and there has not been the slightest return of the spasm.—*Supplement British Medical Journal.*

Peripheral Neuritis in Cancer.—Dr. Auché concludes a work on the existence of neuritis in cancerous subjects, in the *Revue de Médecine*, as follows: 1. Neuritis can develop, and in fact often does develop, in the course and under the sole influence of carcinomatous affections. 2. The situation of the neuritis is very variable, but in general the nerves are the more altered the farther they are away from the nerve-centres. 3. These neurites are in relation with clinical symptoms which one must know to search for in such cases. 4. They are probably due to nutritive troubles and to alterations of the fluids and tissues which take place in the cachectic period of cancerous tumors.

Action of Yeast on Typhoid Bacilli.—Recently Dr. Springthorpe, at a meeting of the Victoria Branch of the British Medical Association, communicated a description of M. de Bavay's results of a series of observations and experiments on the saccharomyces, and their relation to typhoid bacilli. These saccharomyces were obtained from chyle which had escaped from the thoracic duct through an ulceration, and which appeared to possess very strong antiseptic and deodorising properties. After determining that the typhoid bacillus grew best in broth, and that milk was not a specially good medium unless it could be previously peptonized by other materials, M. de Bavay carried on a series of experiments to prove that yeast had the power of interfering with the growth of the typhoid bacillus when the two were cultivated *in vitro*. He found that the typhoid bacillus growing in an alkaline medium was much more virulent than that organism growing in an acid medium. He explains this on the assumption that the poison secreted by the organism is immediately precipitated in the alkaline medium, leaving the bacillus free to act, whilst in the case of the acid medium the poison is not precipitated, and eventually accumulates to such a degree that the organism which secretes it is itself poisoned. He found also that if he retained the sediment from an alkaline solution on a filter, and then dissolved it in a weak acid, he obtained an exceedingly toxic substance. From this he argues that as yeast is able to pass through the intestine comparatively unchanged, and as it develops a considerable quantity of acid in its growth, it should, if introduced into the intestinal canal, maintain a certain acidity in the contents, and so prevent the precipitation and storing up of the typhoid poison—a storing up which takes place when the secretion is allowed to remain alkaline. He also holds that if the food taken by the patient be saturated with yeast—which is a harmless organism—the typhoid bacillus can no longer develop in it, and is therefore very soon starved out, and he maintains that in consequence of this slow absorption of the acid into the system a kind of self-protective inoculation takes place; in fact, after injecting a mixture of yeast and typhoid bacilli, guinea-pigs which had shown slight signs of intoxication but had recovered were proof against large toxic doses of the poison. He describes an organism found in certain cases resembling typhoid which secretes a far more poisonous compound than does the typhoid bacillus itself, which, however, it resembles in many respects, although it develops rapidly on potato, forming an abundant wax-like covering. The colonies on gelatine are exceedingly minute; the bacilli are like those of typhoid but a little stouter; they are arranged in chains of two, three, and four, and have a serpentine motion across the field of the microscope; they stain readily, and are then very similar to the bacilli of septicæmia. Here, however, the poison appeared to belong to the class of albumoses, whilst the typhoid poison he considers to be a ptomaine. His conclusions are 1, that the action of yeast in the treatment of typhoid fever is principally due to the power which it has of secreting an acid, and of doing this over and over again, by which means it is able to render acid the contents of the intestines; 2, that when such an acid reaction exists, the poison secreted by the germ reacts upon the germs themselves and stops their growth; 3, that the action of yeast on the poison of typhoid differs according to whether it is pure or contaminated by bacteria; 4, that liquids impregnated with yeast are in a great measure protected against the depredations of typhoid bacilli, especially if such a liquid contains a fermentable sugar; 5, that these properties of yeast are not confined to one variety, but that they increase or diminish according to the power of assimilation and acid secretions of different varieties. Further, he has found that the typhoid bacilli, after repeated growth in peptonized broth, produce less poison, as it is necessary to use larger doses to produce the same effect.—*Supplement Brit. Med. Jour.*

The Law of Periodical Function in Women.— Ott (*Wiener Med. Presse*) reports some observations, not exclusively upon menstruation, but upon the various vital processes occurring in women during the period of generative activity. These processes correspond in time to the hæmorrhage, are associated conditions, with a dependent relation to it. Observations upon temperature, pulse and blood pressure indicated that vital activity attained its maximum preceding the menstrual period, and declined at its commencement or immediately before. Sphygmographic tracings, muscle strength and excretion of urea suffer similar variations Observations were made at a certain hour each morning during prolonged periods, sometimes extending into the menstrual periods, upon heat radiation, muscle strength, pulmonary capacity, inspiratory and expiratory force, the tendon reflexes, in healthy women placed under the same condition; and a physiological functional periodicity of the female organism was demonstrated. To establish the connection between menstruation and this periodicity of function, it is necessary to determine if the rhythmical variations are independent of menstruation. A large number of observations made by Dr. Schichareff, under the guidance of Ott, upon pulse, temperature and blood pressure in girls between the ages of 8 and 13, and in women between the ages of 58 and 80 years, showed that no such periodical variations of physiological functions occur in females during the periods in which they are not capable of conceiving, and in which they do not menstruate.

Beer-drinking in its Relation to Heart Disease.—In Munich, where the average amount of beer annually consumed reaches 565 litres *per capita*, not only is heart disease very prevalent, but the duration of life among those engaged in the brewing trade is very much less than that attained by those not so engaged. This fact is shown by the average duration of life among the general population (53.5 years), those who keep alehouses (51.35 years), and the brewers (42.33 years).—*Blätter für klin. Hydrotherapie*, No. 4, 1891.

Nasal Polypus and Hysteria.—Dr. Marcel relates the case of an hysterical girl of 23, who for seven years had suffered from frequent attacks of convulsions with loss of consciousness. The convulsive seizures were preceded by an aura starting like an itching or tickling in one side of the nose, and extending to the eyelids, and thence to the throat, where it caused a sense of suffocation. A polypus was discovered in the corresponding nasal fossa, and upon its removal the attacks ceased.—*Medezina.*

Leucorrhœa is, according to Dr. Louis Bauer, often due solely to constipation, hence clearance of the bowels of their fæcal contents is in many cases the chief and most effective treatment of that troublesome disorder.

Criticism on Some of the Lesser Gynecological Manipulations.—Croom (*Edin. Med. J.*) says three factors seem at work in modifying our opinions very considerably with regard to many of the minor gynecological operations and appliances which have been in constant use. These three factors are: 1, The improvement in and education of practitioners in the simple manual examination of the pelvic organs; 2, an improved and revised pathology of the intravaginal portion of the cervix; and 3, perhaps especially the increased knowledge which abdominal section has thrown upon the contents of the pelvis. The fact has been forced upon the author that a large number of cases where abdominal operations have become imperative have been distinctly traceable to interference, more or less marked, with the uterus. He condemns in unmeasured terms, the speculum, the sound, the intra-uterine stem. He extols dilatation of the cervix and curetting.

He calls attention to the three following rules:

1. That the diagnosis of all pelvic and most pelvi-abdominal conditions should be made slowly and gently with the unaided hands, and upon the examination thus made the practitioner should train himself to rely.
2. That no mechanical aids to sight or touch should be employed, except under exceptional circumstances.
3. That as a large proportion of the risks and accidents of *minor* gynecological operations are due to a want of appreciation on the part of the physician of the condition of the uterine appendages, no operation, however trivial, should be undertaken until their state and relations have been ascertained with as much accuracy as possible.

Massage for Constipation of Infants.—M. Carnitsky advises abdominal massage as the best treatment for constipation in infants. The skin should be smeared with vaseline in order to avoid irritating it and the right and left flanks should be the parts selected for the principal treatment, because the large intestine is the sluggish part in infants. During the séance, which should last four or five minutes, it is best to nurse the child so as to keep it quiet and avoid contraction of the abdominal muscles.—*Journal de la Santé.*

Enteric Fever in an Infant Nine Months Old.—Fuller (*Lancet*, No. 3548, p. 1038) has recorded the fatal case of an infant, nine months old, that presented manifestations of irritability and dulness, with diarrhœa, tympanites, and elevation of temperature. At the autopsy, though the spleen was not enlarged, Peyer's patches were found swollen above the surface of the mucous membrane, some of the lower ones beginning to ulcerate. The adjacent intestine was injected. The mesenteric glands were enlarged and the solitary glands of the cæcum were abnormally prominent. In the same house in which the infant lived, an older child of eighteen months, as well as a woman, presented symptoms similar to those of the infant.

Guarana in Leucorrhœa—Pharmacology of the Newer Materia Medica.—A respectable married lady (Mrs. A. E., between twenty-five and thirty years of age), having been for some two years on the decline with uterine and vaginal troubles, who had been treated and had the advantage of the best medical talent, but was relieved only temporarily at times, called on me for treatment, and having prescribed for her, without anticipating anything very serious, or learning all the facts, she got but partial relief. I then made a careful examination, and learned all, as follows: Leucorrhœa of long standing, vesicular vaginitis, very sensitive, painfully contracted, so that a small tube of syringe gave great pain inserted; perfectly impotent, and incapacitated from enjoying the marital relations, etc. Prescribed guarana internally, and as a local application (after cleansing vagina with castile soap and warm water).

℞. Salicylic acid, gr. xx
Glycerin, ℥, M.

—*Archiv. of Gynecology.*

The *Bacteriological World* has been removed from the State University at Columbia, Mo., to Battle Creek, Mich., where its editor, Dr. Paquin, has assumed control of the new laboratory of hygiene at the Battle Creek Sanitarium.

Immunity and Infection.—Dr. A. C. Abbott, in an interesting paper in the *Medical News* on some of the more important contributions to medical literature on the subject of immunity, describes briefly the work recently done by several experimenters. As the result of this work, he offers the following as the present state of our knowledge of immunity and infection:

Of the hypotheses that exist for the explanation of immunity, that which assumes acquired immunity to be due to reactive changes on the part of the tissues has received the greatest support. Immunity is most frequently seen to follow the introduction into the body of the products of growth of bacteria that in some way or other have been modified. This modification may be artificially produced from the products of virulent organisms, and then introduced into the tissues of the animal; or the organisms themselves may be so treated that they are no longer virulent, so that when introduced into the body of the animal they eliminate poisons of a much less vigorous nature than is the case when they possess their full virulence.

Immunity following the introduction of bacterial products into the tissues is not the result of the permanent presence of these substances *per se* in the tissues, or to a tolerance acquired by the tissues to the poison, but is probably due to the formation in the tissues of another body that acts as an antidote to the poisonous substance. This protecting proteid that is eliminated by the cells of the tissues need not of necessity be antagonistic to the life of the organisms themselves, but in some cases must be looked upon more as an antidote to their poisonous products.

In the serum of the normal circulating blood of many animals there exists a body that is capable, outside of the body, of rendering inert bacteria that, if introduced into the body of the animal, would prove infective.

In many instances, infection may be looked upon as a contest between the bacteria and the tissues, carried on on the part of the former by the aid of the poisonous products of their growth, and resisted by the latter through the agency of proteid bodies normally present in their integral cells. When infection occurs it may be explained either by the excess of vigor of the bacterial products over the antidotal or protective proteids eliminated by the tissues, or to some cause that has interfered with the normal activity and production of these bodies by the tissues.

Phagocytosis, though frequently seen, is not essential to the existence of immunity, but is more probably a secondary process; the bacteria being taken up by the leucocytes only after having been rendered inert through the normal germicidal activity of the serum of the blood and other fluids of the body.

NECROLOGY.

Mr. Berkeley Hill, of London, died January 7, aged 58 years. He was in the first rank of the English syphilographers, occupying in London a position comparable to that so long held by Ricord in Paris. He was surgeon to University, College and Lock Hospitals, Dean of the medical faculty in the former; member of Council in Royal College of Surgeons of England, and in 1888, Hunterian Professor of Surgery and Pathology in that college, when he chose endoscopy for the subject of the year. He died from cancer of the liver, after a lingering and painful illness.

Dr. Samuel Hard Case, of Oneonto, N. Y., who died January 18, 1892, was one of the most eminent citizens as well as the senior practitioner of Otsego County. He was active in his calling for over half a century; he was the promoter of public improvements, and served in various local offices. He was a graduate of the Fairfield Medical College in 1829, and at the time of his death had attained the age of 83 years.

BOOK REVIEWS.

Age of Domestic Animals. A treatise on the dentition of the horse, ox, sheep, hog and dog. F. A. Davis, Philadelphia, Publisher. Price $1.75.

This convenient volume is well illustrated and presents a careful compilation of all that has been written on this subject from the earliest times. The information given is of very great practical value to physicians.

Diseases of the Skin. By W. Allen Jamieson, M.D. Third edition. Revised and enlarged, with wood cut and colored illustrations. Philadelphia: Lea Brothers & Co., 1892.

In common with other special departments in medicine, that of dermatology is rapidly approaching an exactness in diagnosis and treatment which fairly places it at the front among the specialties. This volume by Dr. Jamieson is a valuable one for practitioners and students, as it is both full and concise without being unwieldy and voluminous.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., assisted by Walter Christie, M.D.

Vol. 1 opens very appropriately with some general therapeutic considerations embodying methods, dosage, state of the patient, and drug combinations by H. C. Wood, M.D. The next theme is that of prescription writing, and combination of drugs, by J. P. Remington, Ph.M. Electro-therapeutics is a well illustrated chapter by A. D. Rockwell, M.D. This is followed by an excellent chapter on Swedish Movements and Massage, by Benj. Lee, M.D., and so on as we look through the two portly volumes just issued. We find chapter after chapter on all subjects pertaining to the treatment of diseases and injuries. Each written by an acknowledged authority. An abstract of which, be it ever so meagre, would fail to do justice to many of the well written articles, making up this valuable system of practical therapeutics.

MISCELLANY.

Medical Society of West Virginia. — Annual meeting at Clarksburg, West Virginia, in May, 1892. C. Shriver, M.D., Prest., Bethany, West Virginia; D. Mayer, M.D., Secretary, Charleston, West Virginia.

N. C. O. Medical Society.—Eleventh annual meeting of this society will meet at Mansfield, Ohio, Friday, March 25, 1892, in probate court room. The following papers will be read:

President's address.

Constipation—Its Causes, Consequences and Treatment, Geo. P. Sattler, M.D., Pavonia, Ohio.

Diphtheria—Etiology, A. V. Patterson, Mansfield, Ohio.

Diphtheria—Treatment, H. B. Gibbon, M.D., Tiffin, Ohio.

Differential diagnosis between Croupous and Diphtheritic Membranes, J. W. Craig, M.D., Mansfield, Ohio.

To Open Discussion, F. C. Larimore, Mt. Vernon, Ohio.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 5, 1892, to March 11, 1892.

Major Alfred A. Woodhull, Surgeon U. S. A., having completed the duties assigned him by Par. 4, S. O. 303, A. G. O., December 30, 1891, will proceed from New York City to Hot Springs, Ark., and take station thereat as surgeon in charge of the Army and Navy General Hospital.

Col. Basil Norris, Surgeon U. S. A., retirement from active service this date, by operation of law, is announced. By direction of the President, Washington, March 9, 1892.

First Lieut. Philip G. Wales, Asst. Surgeon U. S. A., is relieved from further duty at Ft. Apache, Ariz., and will report in person to the commanding officer, Ft. Bowie, Ariz., for duty at that station, relieving First Lieut. William N. Suter, Asst. Surgeon U. S. A.

A board of medical officers, to consist of: Major David L. Huntington, Surgeon; Capt. Henry S. Turrill, Asst. Surgeon; Capt. Henry S. Kilbourne, Asst. Surgeon; Capt. Walter W. R. Fisher, Asst. Surgeon, is constituted, to meet in New York City, on the 1st day of April, 1892, or as soon thereafter as practicable, for the examination of candidates for admission to the Medical Corps of the Army.

Capt. Jefferson R. Kean, Asst. Surgeon U. S. A., is relieved from duty at Ft. Robinson, Neb., and ordered to St. Francis Bks., Mo., for duty, not later than March 25, 1892, relieving Major David L. Huntington, Surgeon U. S. A. Major Huntington, upon being relieved by Capt. Kean, will proceed to New York City, for duty in connection with the Army Medical Board.

Capt. Marlborough C. Wyeth, Asst. Surgeon U. S. A., is relieved from further duty at Ft. McIntosh, Tex., and ordered to Ft. Supply, Ind. Ter., upon the expiration of his present sick leave of absence.

Capt. Marcus E. Taylor, Asst. Surgeon U. S. A., granted leave of absence for six months, on surgeon's certificate of disability.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending March 12, 1892.

Asst. Surgeon F. B. Braithwaite, from hospital, Chelsea, and to the U. S. S. "Fern."

Asst. Surgeon M. F. Gates, from the U. S. S. "Fern," and granted two months' leave.

Asst. Surgeon Henry La Motte, ordered to the U. S. receiving ship "Vermont," at New York.

Asst. Surgeon L. L. von Wedekind, from the U. S. S. "Vermont," and granted three months' leave.

Medical Inspector E. Kershner's orders to the U. S. S. "San Francisco" are revoked.

Medical Inspector Wm. K. Van Reypen, detached as assistant to Bureau Medicine and Surgery, and to the U. S. S. "San Francisco."

P. A. Surgeon J. D. Gatewood, ordered to the U. S. S. "Dolphin."

Asst. Surgeon E. R. Stitt, ordered to the Naval Hospital, Philadelphia, Pa.

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ORIGINAL ARTICLES.

THE HOSPITAL: AN ELEMENT AND EXPONENT OF MEDICAL EDUCATION.

An address delivered at the formal opening of the new Hospital of the University of Michigan Jan. 20, 1892.

BY ALBERT L. GIHON, A.M., M.D.,
MEDICAL DIRECTOR, UNITED STATES NAVY.

The marvelous rapid growth, which has spread its iron threads, as a spider's web, over mountains and valleys and mighty rivers, in fewer years, than the aeons of time, in which nature has channeled her water-courses—which builds a million-peopled metropolis upon a waste plain within a human generation—and which runs the gamut of social development from the ragged barefoot of the frontiersman's cabin to the cultured man of science, as a musician would a chromatic scale, may well cause one to pause in his intended teachings, who comes hither from the part of our country, which we, who live there, think so old—the narrow strip of coast-line whereon our forefathers rested with their children, before they began their giant strides towards the west. The courteous invitation to assist at the formal opening ceremony of this new hospital, coupled with the request to say something about the hobby I have ridden so often elsewhere—Medical Education—has fortunately saved me from the dilemma of attempting to enlighten where no enlightenment is needed, for in speaking of the hospital as an element and exponent of medical education, I have only to eulogize the work you have already done, and bear testimony to the practical demonstration in this place of the good fruit, which the well-cultivated tree of medical knowledge may be made to bear.

The institution and development of a great hospital are in fact the best fruit of that wider understanding, which comes from the higher education in medicine, upon which all its earnest and disinterested followers, in these days, insist. The hospital is the expression of man's tenderest sympathy for his hapless suffering brother, and it stands, with doors opening ever inward, to give the warmest welcome to him who is most hapless and most suffering. Gathering these helpless ones within its walls and inviting the solution therein of the most complicated problems of disease, it calls for the adroitest skill, the profoundest learning, the widest research and the most patient investigation. All these the great modern schools of medicine, in generous emulation, are now seeking to promote, and none with greater zeal and assurance of success than the University, under whose influence this institution has come into being.

Once upon a time, I believed, as all good Philadelphians were wont, and as doubtless many still do, that no good medical thing could come out of any but the Nazareth on the banks of the Schuylkill, and it was only grudgingly admitted, after many years, that other waters on which the Eastern sun arose, might brew good beer, though not of course, quite so good as that which the fathers in medicine quaffed behind the red brick fronts of the quiet Quaker town, whose name of brother's love fitly types the spirit which moves men to enter upon the study of that greatest evidence of man's love for his brother man, which we call medicine. But, who among those reverend and revered fathers in medicine would have turned his eyes westward to scan prophetic sites of new temples to the Aesculapian god, on river banks and among forest wilds, where only red men were leading their simple lives? Yet, no laurel-wreath more worthily adorns the newer America of the West, than that which she has won, in her endeavor to make the culte of medicine pure and undefiled and to build for it temples where only the true faith—being the faith of truth—shall be inculcated, and of one such we are honored guests to-night.

If there be one truth, brighter than all others, which higher education in medicine has caused to be proclaimed as a gospel of "good tidings of great joy, which shall be to all the people," it is that the prevention of disease is the physician's first and highest office, and to the glory of the west, this sapling from the tree of knowledge there took firmest root and brought forth its first fruit in the shape of the splendid system of State Boards of Health, which have contributed so much to the health, strength, productive power, wealth and prosperity of this country, and of which it ought to be supremely proud. When no other of the original thirteen, or their eldest offspring, followed the lead of Massachusetts, whose eternal honor it was to have instituted the first State Board of Health on the 21st of June, 1869, it was California, youngest sister of them all, and from the extremest west, which took up the movement, to be followed by Minnesota and she by Virginia, with, however, but feeble ardor, the fifth in the order of sequence having been Michigan, which from the start acted with a vigor of purpose that has grown, year after year, until to-day her State Board of Health is one of the most able, most efficient, and most useful of those famous engineries for stamping out preventable diseases, which have done more towards lengthening human life, improving the race, and increasing the productivity of the State, than all the drugs and drug-mills that have been in operation since its beginning. After Michigan, naturally came her nearest neighbor, Wisconsin, and of the eleven that followed in their wake, seven were also western organizations, among which Tennessee and Illinois have been especially note-worthy for energetic and beneficial sanitary action.

As a better understanding of the real scope of our sublime science has exalted preventive medicine to its high estate and led to the institution of the means for its application, these very means have themselves come to be the instruments for weeding from the fair domain of our profession, the tares which have overgrown it, and for driving from the temple the money-changers and charlatans, by whom it has been defiled, dishonored and disgraced. It was in the west that the State Board of Health became the State Board of Medical Examiners and with peculiar appropriateness sought to exterminate, among the other preventable morbific agencies, that arch-enemy of the public health, the false physician. I have been for some years endeavoring to collect funds sufficient to erect at the National Capital a monument to the greatest physician this country has produced, the immortal *Benjamin Rush*, but the late Secretary of the State Board of Health of Illinois, whom I count also as among the great physicians of America, has builded his own monument in that splendid report on Medical Education, through which the State Board of Health of Illinois, became the van of the army of the west, and he its commander-in-chief, in the campaign against the host of medical pretenders, who have entrenched themselves in every town and village. A man of unostentatious habits, modest in demeanor, tireless in work as he was inconspicuous in his working, generous, big-hearted, beloved by all; a typical western man, if it may be permitted me so to say, John H. Rauch of Illinois, the animating spirit in this conflict, has fought a brave fight in the cause of medical education, and won a fame, which no epauletted hero could outvie, across the Atlantic as among his own grateful countrymen.

Were this audience exclusively of medical men, the subject of medical education would require no definition, since it is one—the prominent one—interesting the profession to-day, and while it cannot be claimed that the 106,000 members of the fraternity are a unit in their views, it is safe to say there are but two sentiments entertained respecting it—the one, that of the entire body of physicians who are themselves educated, and the other, that of the sciolists and smatterers, the pretenders and charlatans—and pity 'tis, 'tis true that the former are not numerically the greater. It might seem the discreeter part to keep this to ourselves as a family failing, but the cause of medical education can only be advanced by acquainting the public with its need, by candidly admitting that the designation "Doctor" is not *per se* the distinctive title of a man learned in the science and art of medicine, and by avowing, however humiliating the avowal, that the diplomated certificate in academic Latin that Gulielmus Smith or Johannes Brown "in medicinæ arte optime versatus est," displayed with college seal and broad blue ribbon in handsome frame upon the doctor's office wall, is not a patent of professional erudition and ability. It ought to be that by virtue of his office, the doctor in medicine should be the recognized superior in learning, culture and acquirements in every community, great or small, and that this is not so is the lamentable reason for the agitation of the subject of the higher education of medical men, meaning thereby their proper education.

What guaranty have you that the man claiming to be a physician is really one? He has a diploma, but diplomas have been bought, without the farce of sham tuition, and for a contemptibly cheap price. He is the graduate of a medical college, but there are colleges at which instruction is but a pretense, where no attendance is required, and where the chief solicitude of the examiners for degrees is to ask a question or two that cannot fail to be answered—colleges where the size of the class is the ambition and the payment for the tickets the paramount concern. After a personal experience as a physician of almost forty years I do not hesitate to declare that the greatest danger I have dreaded for my family when going to strange places has been the unknown doctor, and I have always cautioned them that it were safer to run such risk as may be from doing nothing the one time in a hundred when something should be done than encounter the far greater peril of having that one thing wrongly done by some pretender, who does not content himself with the "yarbs" and roots of the country old-wife, but dabbles in potent pink pellets, of whose actions and uses he knows only what he gathers from their advertising wrappers. Hence the interest of the public in the thorough education of the men to whom their own and their dear ones' lives may be committed, and why they should understand just what is this medicine, which requires such skilful ministering. Certainly, it is not the mere mending of sores and bruises by plaster and poultice, the giving of sweats and purges, the fussy fumbling of the pulse, or the solemn inspection of the trembling protruded tongue, since any village Sairy Gamp is adept enough with healing balsams, and hits many a bull's eye, with "castor ile" and "hiery-pikry," or "bone-set," stripped up or down according to its intended working.

The minister of the body's health has as grave an office as the minister of the soul's welfare, for the *mens sana* can only reside *in corpore sano*, and his preparation for that office is serious without parallel, for to know that body well involves the study of the most marvelous intricate mechanism ever fashioned by the Divine Will, and to know how it lives and moves and has its being requires a thorough understanding of everything surrounding and influencing it—hence of everything upon the earth and in the air and in the waters, and off in the vast abyss of Cosmos. So, the physician, from the very etymology of his name, is the student of *Φυσις*, that beginningless and endless vibration of Omnipotence, which man alone among created beings has been able to comprehend, though only as through a glass darkly. It is in no invidious sense, that beside this stupendous study, the soul's guardian has an easier task, having only to teach the obligation to love the Lord God with all one's heart and soul and mind, and to love one's neighbor as oneself, and teaching this best in the simple phrase of the Saviour of mankind, rather than in the abstruse terminology of theological schools. The physician of the sin-sick soul has only this remedy, itself a spiritual one, to administer, to lift that soul to its highest possibility and cure it of every spot and blemish—believe and be saved; while the physician of the body has not only the pains and aches of the individual to combat, but those morbific tendencies and agencies which assail masses of men, communities, nations and whole races, subjected to the hostile influences of climate and the pestilential sequelæ of war, famine and drought, and this broad view of his sphere of action has been opened by that better medical education, which teaches that however perplexing the question of individual cases of disease, far more difficult and important is the problem how to banish disease from the earth, that human life may be lengthened, the trength and vigor of the community be increased, he welfare, happiness and prosperity of the whole people be assured.

It needs no argument that men charged with such weighty responsibility should be thoroughly fitted for t, but let us think for a moment how doctors have been made—"M.D.'s," as they are familiarly termed from the collegiate distinction bestowed upon them at graduation—a distinction, one of the most honorable to which an educated man can aspire, for whether a *Doctor* in Medicine, or Law, or Theology, or Science or Philosophy, it signifies, as the diploma conferring it asserts, that he has become entitled to this high approval by study, by research, by original thought, or by invention or inquiry in one of these great intellectual pursuits. Had this been so, there would have been little need for insistence upon the better education of those entering upon the study of medicine. Men much younger than myself must have vivid recollections of medical schools of great pretension, whose benches were crowded by a strange company of young and old, from city homes and distant rural localities—a few fresh from college or academy, but the majority without sufficient preliminary education to enable them to take notes of the lectures to which they listened, but which they could not possibly comprehend. To such a one, the common technical language by which the anatomist described the first bone was an unknown tongue, and when, by dint of repetition, he had learned that *corpus* meant body, *foramen* hole, *sulcus* groove, and *articulus* a joint, he had to flounder among sterno-cleido-mastoidei, gyri fornicati and columnæ carneæ, or track the tortuous way of a pneumogastric nerve, chorda tympani or recurrent laryngeal. He might have recognized the "liver and lights" as old friends, but in an hepatic and pulmonary garb they were as strange to him as the "bones and sinews" when these became osseous and ligamentous. After an hour of jargon of this sort, he went to listen to another no less bewildering medley of atoms and molecules, crystals and salts, which were not salt. In my day, the Gordian knot of chemistry was not attempted to be untied. The chemical lecture was simply skipped, or if any youth were brave enough to try to learn by rote a few of the inorganic combinations of the common elements, he did not hesitate to draw the line at the organic compounds, which at that time did not rejoice in formulæ of C's, H's, N's and O's piled up in kaleidoscopic shapes as children make with building blocks. A third hour with another elementary branch, materia medica, only dazed him the more, by a set of nouns, adjectives and verbs entirely unlike those he had already heard. Was it strange he welcomed the relief from the Babel-tongued confusion afforded by the surgical amphitheater, where, if the blood-curdling operation did not cause him to faint, he felt assured he was born to be a surgeon, or he roamed with a crowd of others over a hospital ward and gazed curiously into pallid faces, or stupidly groped for the pulse in hot, emaciated wrists? Two full courses of such a jumble of what are considered elementary branches, with a veneer of theoretical and practical medicine, surgery and obstetrics, the nominal dissection of a "part" or two, and a dangerously indistinct recollection of an operation or clinical demonstration, constituted the one time education of the physician. The making of doctors was a more or less profitable occupation, and the trade spirit, which rejoiced in machinery that turned out a larger stock than rival concerns, infused itself into these mill-products, which were themselves only tradesmen from the start to the very end of their careers. To these, all there was of medicine was the money-making art, and shrewdness in business methods, which led to acquired wealth, became the ambition, rather than eminence for profound learning, varied acquirements, and skill in diagnosis, treatment or prevention.

Until recent years, the archives of the medical examining boards of the Army and Navy furnished almost the only incontestable records of the ignorance and incompetence of graduates of medicine, and their occasional revelations were attempted to be discredited by the statement that only those physicians sought the military service, who could find no occupation at home. But the institution of State Boards of Medical Examiners, and the organization of county and municipal health boards, requiring accurate returns of vital statistics, developed the amazing and incredible extent of the illiteracy in the ranks of the profession. There are now in Illinois two graduates in medicine studying the three R's on probation for licenses to practice. Indeed, it has been found that not a few of the legally created M.D.'s were as discreditable members of the profession as the self styled "doctors"—many of the latter, in fact, possessing a native ability that made them superior to the graduate. I could occupy many hours with the recital of ludicrous examples by graduated physicians, who deliberately placed in writing the evidences of their astounding ignorance, but the mirth ceases, when you reflect that the day may come when the lives of your dearest relatives may be at the mercy of one such.

The argument against the legal interdiction of the license to practice medicine by uneducated physicians, on the ground that it is an interference with the inalienable right of an American citizen to follow any calling he sees fit, and in his own way, has been used to prevent the closure of the doors of medical colleges to uneducated matriculants, but a sufficient answer is that it is not possible for the average untutored youth to comprehend the teachings of the medical colleges of to-day, for though there have been John Hunters, who achieved the highest professional renown in spite of every early disadvantage, the phenomenal success of the one among many thousands does not justify those thousands of preventable sacrifices. Your own James Craig Watson, "whose name is known wherever an astronomer points his telescope to the stars," and who brought honor to his State and home, toiled till he surmounted every obstacle in his upward climb; but what higher peak might not he and others like him have reached, had they lost fewer hours of their brief lifetimes in this toilsome drudgery over the approaches to the unknown regions wherein they were to find future fame. The restrictions sought to be imposed are not in the interest of wealthy or aristocratic classes, since the University of Michigan announces as its annual fee "for Michigan students *twenty-five dollars*, for all others *thirty-five dollars*," and the Medical Department of the University of Texas starts out with professors whose official salaries range from $2,500 to $3,000, and who can consequently afford to be indifferent to the size and exacting as to the character of their classes; and this might be and should be the case everywhere, were teaching faculties salaried, and examiners for degrees independent of them. Already "there are in the United States thirty-two examining and licensing boards that do not give instruction, and two in Canada."

The first step in the direction of reform in the methods of medical education was practically taken by the Committee on Medical Education of the State Board of Health of Illinois, which in 1880 reported in these words:

"It is too shamefully true that at present many students are admitted to the lecture courses whose illiteracy prohibits their profiting by the instruction given, except in the narrowest limits, and precludes the possibility of their attaining such knowledge as the duties of the profession positively demand.

"Natural talent and aptitude may go far toward fitting a man for any calling, but no talent can take the place of a thorough education in a profession where such large fields of knowledge are to be mastered, and so many and such important judgments are to be constantly and promptly formed.

"It is a palpable absurdity to expect to make skilful physicians of illiterate students by mere dint of reading them lectures, even when accompanied by quizzes and examinations."

This modest beginning of what was to become a mighty undertaking occupied only five pages of the Third Annual Report of the State Board of Health, and so was almost coincident with the establishment of the Board. The following year, the report of this same committee filled fifty seven pages, and it has continued to increase in length and importance until the present year, when the seventh report of the committee has become a volume of 222 octavo pages, the most accurate, exhaustive and authoritative exposition of the status of medicine in the United States and Canada. From it we learn that there are 148 medical colleges in the United States, and of these 129 require certain educational requirements for matriculation, against 45 who did so in 1882.

It should be a matter of peculiar gratification to you in Michigan, that the Department of Medicine and Surgery of your University was among the first to raise the requirements for admission to its teachings, with unselfish disregard of its possible effect upon the number of its matriculants, and it is a matter for congratulation by your fellow-countrymen all over the United States to learn from the announcement of President Angell that, from this year, "it will demand a grade of preparation equal to that for admission to the scientific course in most colleges." Excepting the matriculants in course in literature, science and arts, and the graduates of literary colleges of good standing, and of a published list of diploma- and high-schools, every matriculant must be examined in English, presenting grammatical and rhetorical analyses of selections of prose and poetry, and an essay correct in spelling, punctuation and literary composition; in mathematics, as to arithmetic, and especially the metric system of mensuration, algebra and plain geometry; and in physics, botany, zoology, physiology, history and the elements of the Latin language. The list is so immeasurably ahead of what was, or rather was not, required, as to disarm criticism, but chemistry, and physical and descriptive geography and geology might well be added, to complete the equipment of the intending student of medicine.

Some of the prominent universities of the country, notably the University of Pennsylvania, Cornell, the Sheffield Scientific School of Yale, the College of New Jersey, Johns Hopkins, Northwestern University, and the University of Wisconsin have instituted special courses preliminary to the study of medicine and an attempt was made to establish a three years' course preparatory to the study of medicine at Ann Arbor. The scheme, unfortunately, did not succeed, but I understand it is proposed to establish a conjoined scientific and medical course of six years.[1]

The requirement of a proper preliminary education of medical students is not all that is necessary for the improvement of the personnel of the profession. Two annual courses of lectures, the second a repetition of the first, and the nominal tutorage of a preceptor once constituted all the didactic instruction which was considered necessary to make the most illiterate bumpkin learned in medicine, and during the fifty years from 1830 to 1880, but little progress towards higher medical education was made. Ten years ago, only twenty-two colleges required attendance upon three or more courses of lectures before graduation; to-day there are eighty-five, and the duration of the lecture terms has increased from an average of 23.5 weeks (in eight colleges the time was only sixteen), to 26.3 weeks, one hundred and eleven colleges having terms of six months or more, when in 1882 there were only forty-two. The Chicago Medical College was the first in this country to adopt, by a vote of the faculty on the 4th of June, 1868, the three years' *graded* course, but up to 1880 there were only nine colleges in the United States that had adopted it, while in 1890, the number had increased to sixty-two, and the American Medical College Association at its meeting in Nashville, in May, 1890, adopted as a rule, governing the admission of colleges to membership: "That they shall require a graded course of instruction covering a period of not less than three courses of lectures of six months' duration each before graduation."

The movement for higher medical education has not stopped with this. There are "thirty-four colleges that now, or will soon, require four years' study and three courses of lectures, eleven that will require four years' study, and four that will soon have four courses." The course of study recommended by the medical faculty of Harvard University covers four years, although the degree of Doctor in Medicine continues to be given upon the completion of three years' study, the Degree of Doctor of Medicine *cum laude* being conferred upon those, who may have obtained an average of 75 per centum in examinations after completing the four years' course. McGill University of Montreal requires attendance on lectures for four winter sessions of six months each and one summer session of three. In the Department of Medicine of the University of Pennsylvania the course is graded and extends over three years. A four years' graded course is earnestly recommended and provided for but not required, as is the case with the Medico-Chirurgical College of Philadelphia, the Woman's Medical College of Pennsylvania and the Medical Department of Northwestern University. It was the University of Michigan which, declares her president, "decided first of all the medical schools in the country, to make four years of medical study a rerequisite to graduation." The annual announceent for the current year indicates in detail the sysematic arrangement of lectures, recitations and aboratory work for the two semesters of the four ollege years of nine months each, which are so raded that the more elementary branches and the ractical subjects are first taken by the student, the ore advanced branches and theoretical subjects eing presented later, so as to secure, as far as pracicable, an orderly succession of studies.

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[1] I have been told that this has since been decided upon, the degree of B.S. being bestowed at the end of the second year, and that of M.D. at the close of the sixth.

The repetitional course so long the custom, has had ts day, when first, second and third course students at side by side, and listened to the annual iteration f elementary facts and the old jokes about the *ternum* and the *os tincæ*, and saw the same old manikins nd preparations at precisely the same period of the tereotyped course. They saw likewise the treasured pecimens behind the glass doors of the museum ases, only a few privileged assistants to the professrs ever handling the precious mysteries. Today, as you may read in the printed announcement of your College, the laboratory work required of every student, histological, physiological, bacteriological, lectro-therapeutic, pathological, toxicological and harmacological, must familiarize him by touch as vell as by sight with every piece of the human nechanism, and with every agent and instrument hat are ever brought in relation with it.

Doubtless others besides the twenty-one recalcitant colleges that still require only two courses and ave made no provision for longer study, are not in arnest in the cause of medical education and make such professions as they do, not in good faith, but the public will after awhile learn to distinguish between the sterling coin and its pewter imitation. "Possibly," says President Angell, with significant emphasis, "our numbers may for a time be reduced," and it is stated as a fact in the recent report of the Illinois State Board of Health, comparing the two periods of three years each of 1880–83 and 1883–86, that the most marked effect of the crusade against medical illiteracy was in Illinois, Indiana, Iowa, Michigan, Missouri and Ohio, which had 2,257 fewer students and 727 fewer graduates in the second than in the first period, although these States had gained half a million in population in the later triennium. In four States not so influenced, whose population had increased 833, 784 in the decade, there was an increase of 1,487 students out of a total of 3,020 for the whole United States, in which the gain in population was over 12,000,000.

The American Medical Association, the representative body of the profession, adopted in May, 1847, what is called the Code of Ethics, embodying the rules guarding the conduct of physicians towards each other, to their patients and to the general public, and appended with but little hope of their adoption, articles upon the reciprocal obligations of patients to physicians, and of the public to the profession in general. Much of the quaint phraseology of this instrument is like that of the great Master in Medicine, Benjamin Rush, and on that account commands our respectful attention. It declares, "The first duty of a patient is to select as his medical adviser, one who has received a regular professional education. In no trade or occupation do mankind rely on the skill of an untaught artist, and in medicine, confessedly the most difficult and intricate of the sciences, the world ought not to suppose that knowledge is intuitive."

And again: "The benefits accruing to the public, directly and indirectly, from the active and unwearied beneficence of the profession, are so numerous and important, that physicians are justly entitled to the utmost consideration and respect from the community. The public ought likewise to entertain a just appreciation of medical qualification, to make a proper discrimination between true science and the assumption of ignorance and empiricism, and to afford every encouragement and facility for the acquisition of medical education."

Consequently, the problem of medical education, besides the better instruction of the votaries of medicine, involves the enlightenment of the public as to what is Medicine. When some old spendthrift of his health fails to find relief from a long, ever-changing suite of medical advisers, the reproach is bandied, "For what are doctors good?" When at the end of a long career of toil, a retired physician exclaimed, "I am tired of guessing," captious critics reviled his life-work as all guess-work. When one who has outlived criticism is bold enough to say "I don't know," to an idle question as to the cause of some trifling ailment, he is contemned as ignorant and beneath the sciolist, who has a plausible pretext for everything. I fear that in the estimation of the public the medical man is little better than an artificer, who mends dilapidated human vessels, and that the chiropodist, the manicure, the bath-tender and the movement-curer, or to dignify them by higher sounding titles, the balneologist and kinesipath, are his noble brothers with offices scarcely higher, and this is partly the fault of the profession, which, with modest self-abasement, accepts the back seat among the audience instead of appearing upon the stage under the full glare of footlights and head-lights.

The betterment in methods of teaching medicine has not been brought about so much by outside causes as those inherent, for the public has not greatly concerned itself about the legitimacy of Doctor This or That. The spirit of progress in all science, which is characteristic of the Nineteenth Century, has possessed Medicine as all other departments of knowledge. The little oligarchy of six or seven professors, who ruled over as many kingdoms of medicine, have had their domains invaded by exploring vandals, who have enlarged their boundaries and set up new principalities, until now twenty to twenty-five is a moderate collegiate staff, thirty to forty not uncommon, and three famous schools, the University of Pennsylvania, Harvard and Columbia display respectively sixty-three, seventy-five and one hundred and six names of Professors, Emeritus Professors, Adjunct, Assistant and Auxiliary Professors, Clinical Professors, and Clinical Assistants, Instructors, Lecturers, Demonstrators and Assistant Demonstrators. Not even an academic lettered graduate in arts and sciences can hope to master all this diverse detail, of which parts only have been made their life-work by the brightest minds. As Art has its schools and masters of design and color, of landscape and figure, and Engineering has become only a family name for cousins innumerable, of which the youngest, electric engineering, promises to outstrip the rest; as Law has its votaries who walk within distant defined lines and limits; and even the followers of the lowly Saviour marshal themselves in unfriendly camps, so has Medicine grown that great, that so many altars to *dii minores* have been set up, there is danger the great all-pervading spirit which makes of them a whole may be forgotten.

Thirty years ago, Professor Samuel Chew, in a course of lectures on Medical Education, declared that "a hospital forms a necessary part of medical instruction, and so necessary that without it no school of medicine can be even moderately well-qualified to do justice to its pupils." The University Hospital, whose formal opening we signalize to-night, is not only a material element of the scheme of education of this university, but it is the exponent of the excellence of that instruction.

The properly appointed, well-conducted hospital is a measure of the education and refinement of the community, as the thronged out-door dispensary is of its squalor and poverty. Troops of sore-eyed, pallid, emaciated women and children go to the latter for potion and salve, who most need bread and butter, milk and meat. There is little healing in the drops the poor mother's trembling fingers dole out to her suffering child, whose empty stomach and hungry blood are sorer evils than the sentinels of disease on body, limb and face. The hospital ward is both haven and heaven to the physically afflicted. Its inmate is the stranger treated as its guest—the *hospes*, whence its name, hospital—and its paronyms, "hospitable" and "host." The quiet room, the clean bed, the palatable viands, the gentle nurse, work wonders that drugs can not. An experience of many years in hospital administration warrants me in rating the dispensary as the least important of its appointments, the kitchen, the bath-room and the laundry all deserving precedence. The grimy skin often resumes its functions after the hot bath has removed its encumberment of dirt and disease. The nerves, jangled out of tune, cease their discordant impulses under the restful influence of quiet, and gentle sleep, the sweet, oblivious antidote to pain and suffering, comes often after the unaccustomed meal has given that wherewith the little body-builders of the blood may undo the evil the sufferer has done himself. The hospital is the home of the friendless, the porch of the church, from which they leave clean and clothed in their right mind, who entered foul and knowing not what they were impelled to do. There can not be too many of these blessed refuges for the lame, halt and blind, since, when well-administered, they place the sick of whatever class under the most favorable conditions possible for recovery; but no hospital can be well-administered without a large force of competent medical men, nurses and attendants, all of whom should be salaried with amply remunerative incomes. The hospital is not, in any sense, the rival or antagonist of the practitioner. Their lines are parallel, and far above the mercenary level on which the charlatan reaps his harvest. I cherish the Utopian hope that the physician of the future may be regarded as something more than a mere medicine-man; that he shall be what his name implies, the learned physicist—master in physics rather than physic,—profound interpreter of nature's laws, and skilled in the means for preventing their violation, whether by individuals or by States. The recognition of the importance of preventive medicine, and the prominence now given to hygiene at meetings of the national associations, in the local societies, and in medical journals; the fact that all but fourteen of the one hundred and forty-eight medical colleges now have chairs of hygiene, when ten years ago it was only taught with more or less thoroughness in fifty-two; the admission of its paramount position among the universal medical sciences by eminent writers and teachers; and the testimony of great operators and practitioners, on the eve of their retirement from half a century or more of work, that the prevention of disease is the crowning object of medical science, all encourage the belief that the day is at hand when the sanitary counsellor shall be a potentate in the community, as with the family and the individual, and a man of authority in the councils of city, State and Nation. The health officer of the city and the health board of the State are coming already to be regarded as dignitaries of the highest rank, and meriting the highest consideration, and ere long there is certain to be in the cabinet of every nation a Minister of Health, or of the Public Health, with functions as imperative as those of the Ministers of Education, Agriculture, Commerce, or Public Works. The requirement of a thorough preliminary education, and of a graded system of instruction extending over not less than four years, will certainly exclude pretenders, and reduce the number of undesirable students until the men who shall receive their degrees *cum summa laude* shall be adequate for the various health positions of the whole country, for the administration of the hospitals, their annexes and dependencies, and for all the legitimate demands of private practice. There need be no fear that the physician's occupation shall be gone. The topic of the day in France is its depopulation, and the nation is looking for its salvation to the sanitary authorities.

With a wider field of responsibility and influence, demanding higher acquirements, there will be need for an army of health officials, sanitary inspectors, medical advisers, specialist practitioners, college faculties and hospital staffs, and the hospital physician and surgeon, like his prototype, the doughty Knight Hospitaler of St. John, should lead them all in chivalry, fidelity and address—and I doubt not the Knights Hospitalers of Ann Arbor shall be among the most courtly and most valiant of the order.

There has, in late years, been an outcome from the hospital which has introduced into the home sick-room something of the orderly method and thoroughness of hospital routine. The *trained nurse*, in pretty cap and apron, with her quiet self-possession, is a sugar-coating of sweet enticing that makes the bitterest pill palatable. A very priestess of Hygeia, her soft touch, her gentle voice and sympathetic smile equally subdue the fretful child, the querulous woman and the whining man. This University Hospital must make its School for Trained Nurses one of its prominent features, before it fills the measure of good it will do to the community which is blessed by its existence in its midst.

Entertaining the exalted opinion I do of the study of medicine, an enthusiast in my idea of its beneficence and prepotency, I may be pardoned for recalling the long succession of profound thinkers in medicine from the mythical son of Apollo, the "blameless physician" of Homeric times, down to that "beloved physician" of the first century, whose two narratives addressed to the most excellent Theophilus have not yet lost "their power in purifying and enriching the life-blood of mankind," and thence to the men we all know, who have glorified humanity by their benevolent and too often ill-requited labor. To them it has been given to penetrate the mystery of man's existnce, to show how the wages of sin is death, to enounce the blasphemy of ascribing to God's will ll the misery and disease which ignorance, indiffernce and neglect inflict upon the human race. It is ot God's will which incites the misdoings of each uman atom, magnified by self-conceit into a giant, vho is bruised and crushed by the mighty laws he as set in defiance; not God's will that the vesicle, o be some time man, endowed with the Divine imulse through which the masterpiece of creation is to e evolved, shall be freighted with evil tendencies—he taints, the blots and blemishes which ancestors o the third and fourth and fortieth generations have nflicted upon it; not God's will that the new-born hild shall come into a world where everything it eeds, light, air, water, food, are unstinted, to find the light darkened, the air poisoned, the water polluted, the food perverted, by man's own heedless cts.

It is the part of the wise physician to see beyond the mist and gloom of physical defilement that better living in which healthy men and women enjoy that highest possible happiness of well-being, engendering offspring in their own images, to be themselves parents of future vigorous races, and thus fulfill the Divine Will which put man upon the earth as the inal effort of creation. May this University be the school in which such wise physicians shall find the inspiration for their noble work, and this Hospital the field on which their proudest victories shall be achieved.

A CLAIM OF PRIORITY. ATTEMPT TO COMMUNICATE ARTIFICIAL IMMUNITY.

BY ALBERT S. ASHMEAD, M.D.,
OF NEW YORK.

The following paragraph appeared in the *Medical Record* (N.Y.), Nov. 14th, 1891:

"Various attempts have been made by Richet and Verneuil, to transmit to man the exemption from tuberculosis, by injecting the blood of animals exempt, or supposed to be so, for instance, dogs and goats. Following out this same order of ideas, Dr. Bordier now proposes to transfuse the blood of indigenous negroes into non-acclimated whites, who intend to live in tropical countries, as a prophylaxis against yellow fever. It is not said that this proposition has been followed by any practical experiment."

This proposition of Dr. Bordier, that is, a similar and more comprehensive one, was made by me in an article which appeared in the *Medical Record* (N. Y.), Jan. 10th, 1891. It was entitled, "Racial Immunity and Inoculation." I proposed in it to transfer immunity, not from animal to man, but from man to man. I mentioned specially Japanese immunity from scarlet fever, and the immunity of negroes from yellow fever. Either, said I, we shall obtain a modified lymph by inoculating the disease upon an exempt individual, or the transfer of pure blood will transmit the immunity.

In a subsequent article published in the same journal Sept. 5, 1891, and entitled, "Inoculation of a Japanese with Scarlet Fever Germs. An Attempt to Obtain a Modified Lymph to Prevent Scarlet Fever in the Caucasian." I published the results of an experiment which I was then making.

This question was submitted by me to M. de Quatrefages. In his reply, this gentleman said that he was himself unable to give an opinion upon the matter, but promised to submit the subject of my articles to the *Académie de Médiciné* where distinguished bacteriologists would examine, in a more competent manner, the merits of it.

As my correspondence with M. de Quatrefages took place before the proposition of Dr. Bordier is said to have been made, it is evident that the honor of having made it first belongs to me. I have claimed the recognition of this clear right of priority in a letter to the *Tribune Médicale*, of Paris, and also in a communication to Dr. Shrady, editor of the *Medical Record*.

I added, in both of these letters, that I had also transferred pure blood serum of a child who had had scarlet fever, and who, in consequence, enjoyed artificial immunity, to a child exposed to the disease. I was not, at the time, when I thus first mentioned my experiment, able to draw any deductions from my observations. But I have since transferred the pure blood serum of a boy who had had the disease two years previously, to his two brothers, actually exposed to the disease; these two children now, seven weeks after the transfer, are still intact.

These facts, although still incomplete and not allowing of a sure conclusion, I have had to mention, just because the merit of my proposition, whatever it may be, has been attributed to another man. I do not claim for them more importance than they deserve; but I do claim most seriously the priority of the idea which, made by me to the *Académie de Médiciné* of Paris, through M. de Quatrefages, was afterwards made again, at least in part, by Doctor Bordier, Professor at the *Academe des Sciences*, of Paris, and ascribed to him, as its originator.

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY DR. H. GRADLE.

LECTURE II.

In order to understand the importance of the various conditions underlying infection and determining its occurrence, let us review what is known of the struggle between invading bacteria and the resisting organism. The first problem to be answered is: how do parasitic bacteria injure the tissues?

Their mere presence as foreign bodies is indifferent. It is well known that insoluble powders are tolerated in the living tissues without reaction. It has furthermore been shown by Wyssokowitsch[1] that any bacteria not pathogenic to the animal experimented upon are deposited in different internal organs when injected into the blood, and that the deposited bacteria are killed within some hours by the tissues. We must hence conclude that microörganisms can damage the animals cells only by their chemical action.

The poisonous effects of bacterial cultures, in short, of putrid animal fluids, were shown by numerous researches in the earlier part of this century.

Various observers, especially Parnum, obtained extracts from decomposed material, freed from living bacteria by heat or filtration, and with these chemical substances produced in animals forms of septic poisoning. But the fact *that the symptoms of a given disease can be reproduced in animals by poisoning with the chemical products of the specific bacteria of that disease* was first demonstrated by Pasteur in chicken-cholera. By injecting into the body of fowls broth in which the chicken-cholera bacteria had grown, but from which they had been removed by filtration, he produced the somnolence characteristic of that disease. The symptom was the result of a poison generated by the parasites in the living organism in the actual disease, but could be caused as well by the same poison when formed in the culture flask. Poisoning, however, by the soluble products is not infection. The living parasite multiplies in the infected body, while the chemical poison produces only an effect proportionate to the dose employed. The blood of the infected animal can convey the disease to other subjects, which the blood of the poisoned animal cannot do.

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[1] Zeitschrift f. Hygiene, Vol. I, p. 1.

The first soluble poisons of bacterial origin which were identified chemically were the crystallizable nitrogenous alkaloids known as ptomaines. Brieger,[2] to whom we owe the most extensive work, has extracted about a dozen of these bodies from different putrid material. On extending his chemical researches to pure cultures of pathogenic bacteria, he obtained ptomaines, whose poisonous action resembled some of the characteristic symptoms of the diseases from the parasites of which they were derived. Thus typhoid bacilli yielded a ptomaine prostrating animals, while from tetanus bacilli several alkaloids were obtained which could cause convulsions, and from pus staphylococci he extracted cadaverin, a local irritant. He showed moreover that ptomaines could actually be detected in the infected tissues, for instance in tetanus.

The importance of the ptomaines in the explanation of bacterial action is, however, lessened by the fact that they can produce only some of the symptoms of diseases and not any of the characteristic morbid lesions. Moreover, the amount of ptomaines obtained from the culture of any pathogenic bacteria is in many instances not sufficient to account for the intensely poisonous action of the original culture fluid.

Our knowledge of the chemistry of bacterial poisons has been much advanced by the discovery by Roux and Yersin[3] of a substance entirely different from ptomaines in cultures of the diphtheria bacillus. It is a body of albuminous reactions and of a hitherto unknown intensity of poisonous action.

As this substance is rendered inert by heat and can be separated from its solution by its property of clinging to other precipitates, they classed it as a ferment. Their researches were confirmed by Brieger and Frænkel[4] in the case of diphtheria cultures, and extended with the result of finding similar bodies in cultures of tetanus, cholera, anthrax and typhoid fever parasites and of the pus staphylococci.

On account of the albuminous reactions of these poisonous bodies the German authors have termed them *toxalbumins.* The name "ferment" has been objected to because, unlike the well-known digestive ferments, their effect is proportionate to the quantity employed. As toxalbumins have since been obtained from cultures of the pneumo-coccus, the parasites of swine-plague, and various other bacteria, we must regard them as a common class of bacterial products.

Of all known chemical poisons *toxalbumins* are the most virulent. Thus Vaillard and Vincent have experimented with broth-cultures of the tetanus bacillus of such strength that a $\frac{1}{4000}$ of a milligram of the solid residue supposed to be the impure toxalbumin sufficed to kill mice.

The poisonous effects do not set in at once, even after intra-veinous injection, but there occurs a *latent or incubation period* lasting hours, and in the case of small doses even several days. But the *poisonous effect itself persists* also for days or even weeks when the minimum fatal quantity is used (in the case of the diphtheria toxalbumin). The symptoms vary with the origin of the toxalbumin and recall many of the clinical features of the corresponding disease. In tetanus, indeed, the course of phenomena is the same whether the animal be infected with the living bacilli or poisoned by a sufficient dose of their toxalbumin. These bodies will cause not only functional symptoms but also morbid lesions characteristic of the original disease. There is, therefore, all reason to believe that many of the disturbances produced by parasitic bacteria are the result of the toxalbumins which they secrete in the living body.

Besides ptomaines, toxalbumins and possibly other as yet unknown soluble products, bacteria possess chemical weapons locked up in a less soluble form in their own bodies. Buchner has shown that very many bacteria, after having been killed by heat and washed on a filter, are irritant to the tissues to a sufficient extent to cause suppuration. The bacterial body is evidently dissolved slowly by the animal juices and then poisons the tissues. By dissolving the washed bacterial cadavers in the test tube by means of prolonged boiling or weak alkaline fluids, solutions of albuminous reactions could be obtained possessing pyogenic properties. Such poisonous "bacterial proteids," as Buchner calls them, evidently constitute part of the body of the living parasite and as some of the parasites are disintegrated under the influence of the living tissues their cadavers aid the rest of the invading host in its attack. Koch's tuberculin evidently belongs to this class of proteids, as it is extracted from the bacterial mass by prolonged boiling. Another instance of an intense poison locked up in the body of the parasite has just been discovered by R. Pfeiffer[5] in the case of cholera cultures.

The *defense of the organism* against invading bacteria varies in degree in different instances. An active resistance can scarcely be said to exist in those cases, like virulent anthrax and septicæmia in rodents, in which the animal succumbs invariably and always within the same time. But whenever there is any tendency to recovery we must recognize that there is a struggle between the parasites and the host. For recovery means that the microbes have either been destroyed or eliminated after having been rendered harmless in some way or other. The highest degree of defense occurs in those instances where a given bacterial species, pathogenic to other animals, can not gain a foothold in an individual. This is termed natural immunity. It is well known, however, that immunity is also acquired after recovery from certain infectious diseases, so that the patient is not likely to contract that disease a second time in his life. But not all parasitic diseases are self-protecting. Yet in many instances in which clinical observation simply shows that an infection may occur again after a variable length of time, experimental analysis has proven that a transient period of immunity does exist. In erysipelas artificial reinoculation of a patient has failed up to three months after the last attack (Fehleisen), and in pneumonia Klemperer detected in the blood the chemical conditions conferring immunity for at least several weeks after the crisis.

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[2] Ueber Ptomaine, 1885 to 1887.

[3] Annales de l'Institut Pasteur, Dec., 1888, and June, 1889.

[4] Berliner klinishe Wochenschrift, No. 11 and 12, 1890.

[5] Zeitschrift f. Hygiene, Vol xi, p. 393.

Indeed, acquired immunity does not necessarily last a life time. When we test the immunity against small-pox by re-vaccination it is usually found that the susceptibility begins to return after the lapse of some seven years.

Immunity can vary in degree. This fact, which the accidental observation of the clinicist could not have revealed, was brought out by experimental researches of Pasteur. On learning that the virulence of parasitic bacteria can be modified by their mode of culture he also determined that the degree of immunity following recovery from inocculation of the enfeebled parasite varied with the attenuation of the virus. Infection with a feeble virus can confer immunity only against comparatively weak parasites, while the animal may still succumb to the same microbe in a state of greater virulence. But by repeating the inocculation successively with bacteria of increasing virulence, and thus submitting the animal to several successive infections, a degree of absolute immunity is ultimately reached. These fundamental facts first discovered by Pasteur in the case of chicken cholera have since been found to hold good in all self-protecting diseases tested experimentally. The principle of protection against a disease dangerous to life by inducing a harmless infection by means of a mitigated virus, has been practiced on man since Jenner's discovery of vaccination. It is only in recent times, however, that the identity of the virus of small-pox and cow-pox has been definitely proven.[6]

The attenuation of bacterial virulence for the purpose of protective vaccination can be accomplished in various ways, and any one method is not necessarily applicable to different diseases. The bacteria of chicken cholera were enfeebled by Pasteur by keeping them in the unchanged culture broth for months in the presence of oxygen. Anthrax bacilli were found to lose their virulence progressively by cultivation at high temperatures (Pasteur), or the addition of antiseptic chemicals to the soil (Roux and Chamberland), or by the influence of compressed oxygen (Wosnessenski), while the bacilli of symptomatic charbon were changed into a safe vaccine by a heat just below the thermal deathpoint (Arloing, Cornevin and Thomas). Another mode of diminishing the virulence of some parasites is to pass them repeatedly through the bodies of some animal species, different from the one they habitually attack. This was done by Pasteur in the case of the disease of swine known as "rouget," and the same method has been used by Voigt and by Eternod and Hacciers in converting the virulent small-pox virus into harmless cow-pox vaccine.

Immunity can also be induced by infecting animals with bacteria of full virulence but in a number minimal enough to be overcome by the organism. Emmerich claims to have done this with the pneumococcus in the very susceptible rabbit, while Chauveau had formerly rendered Algerian sheep, by nature partially immune against anthrax, absolutely refractory in this manner.

At the present day the most interest, however, centers in the attempts to confer immunity not by actual infection with a mitigated parasite, but by protective injection of the chemical products of bacteria. Success in this line was first claimed by Salmon and Smith, who stated that they had rendered pigeons immune against the virus of swine plague by previous poisoning with sterilized cultures. The accuracy of this statement has since been questioned by Selander[7] as far as pigeons are concerned, although in rabbits he did produce such results. Successful chemical vaccination however, has been accomplished in a precise manner by Chamberland and Roux in symptomatic charbon and malignant œdema, by Roger in the disease produced in rabbits by the bacillus of blue pus, by Hankin in anthrax, by Fraenkel in diphtheria, by Tizzoni and Cattani in tetanus, by G. and F. Klemperer in pneumo-coccus poisoning. The special substances in the bacterial cultures which confer immunity are of an albuminoid nature. But in the two instances which have been investigated, viz.: diphtheria and pneumo-coccus cultures, they were not identical with the tox-albumins. The broth in which the bacteria had grown lost its poisonous properties by heating for one hour up to 60° C., but retained the faculty of rendering animals immune. Boiling, however, destroys the substances in question.

The state of immunity, in whatever way it be obtained, is not produced until after the lapse of a number of days. Both infection with mitigated virus and protection with chemical vaccines bring about changes in the organism which require from 4 to 14 days for their completion. Prior to that time the animal is not protected against renewed infection.

In the struggle of the organism against the invading bacteria the latter are killed to a great extent whenever the animal system triumphs. This fact has been proven in many experimental instances. How can we account for the victory of the organism?

It has been shown that fresh blood and serum and tissue juice possess certain germicide properties. But since these are only transient, and since animal fluids are otherwise a favorable soil for bacteria, this peculiarity could only be demonstrated in the following way: Bacteria taken from a living culture are introduced into a test tube of fresh serum, and the number of germs in a drop of the serum is then determined at once and again at intervals of hours by means of plate cultures. It was thus found that the number of living germs was diminished during the first few hours, and that when not too many bacteria had been added they were all destroyed. But this germicide influence ceased after some six hours, and any bacteria that had escaped could now multiply unhindered. The germicide property seems to depend upon the presence of certain unstable substances which are rendered inert by any physical or chemical influences affecting the constitution of albuminoids. These germicidal albuminoids are apparently consumed in their action upon bacteria, for only a certain number of bacteria can be destroyed by a given quantity of blood and if the bacteria are in excess some of them escape destruction. These substances, moreover, are not poisonous to all bacteria but are *specific* in their destructive influence upon certain parasites only.

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[6] By Voigt in 1882, and since confirmed by Eternod and Hacciers in 1890.

[7] Annales de l'Institut Pasteur, Sept. 1890.

There are differences in this respect in the blood of different animals. Human blood has been found by Stern to be destructive to cholera bacteria and less so to the typhoid bacillus. It arrested the growth of, but did not kill diphtheria bacilli, and exerted no damaging influence upon anthrax bacilli and staphylococci. The most potent germicide influence is exerted by rat's serum upon anthrax bacilli, equalling in this respect a 2 per cent. solution of carbolic acid (Behring). It is of interest to note in this connection that the rat is very, but not absolutely, refractory to anthrax. The view suggested by this fact that the germicide property of the blood plays a rôle in the defense of the organism, is borne out by the observation that bacteria like the staphylococci which can exist as blood parasites, are not damaged by fresh blood. On the other hand, those microbes which cannot thrive in the living blood vessels like typhoid, diphtheria and cholera bacilli, are the most readily killed by the extra-vascular blood of most species. The relations of the germicidal properties of the blood to immunity are also suggested by several striking observations on the difference in the behavior of the blood before and after protective vaccination. Thus Behring found that the so-called vibrio of Metschnikoff which grows readily in the blood of normal rabbits could not grow in the blood of vaccinated animals. Charrin and Roger noted the same difference in the serum of rabbits as regards its effects upon the bacillus of blue pus before and after the animal had been rendered refractory, and Roger showed this to be true also of the entire tissues of the guinea pig as a soil for the bacillus of symptomatic charbon. Yet this chemical action of the tissues and the fluids upon those bacteria, which do not kill the animal, cannot be demonstrated in all cases. In fact no such effect has been found in anthrax and pneumo-coccus poisoning and other instances of non-fatal infection, with mitigated virus. The organism must, therefore, possess other means of defense besides the existence or formation of soluble "defensive" albuminoids.

Warfare against invading bacteria is also carried on by the white corpuscles and other mobile cells of the body. These facts, on which is based the "phagocyte theory" of defense, have been demonstrated mainly by the labors of Metschnikoff. He had observed that in a parasitic disease of a transparent species of water fleas, the infecting fungus cells were devoured by the mobile cells of the animal and apparently destroyed by them. Bearing in mind that leucocytes play an important rôle in the absorption of any solid particles or tissue-remnants, Metschnikoff then extended his observations to many and varied instances of infection in higher animals. He has thus learned, that in all infections where the parasites do not at once overwhelm the animal, the bacteria are ultimately engulfed to a large extent by wandering cells. If the animal recovers, the bacteria which are not thrown out of the system are killed and disintegrated in the interior of the white corpuscles, while in the fatal instances the parasites either poison the cells which devour them or in the more overwhelming infections no phagocytosis occurs at all. Buchner has since shown that the stimuli which attract the leucocytes to the attacked spot, are the proteids of the bacterial bodies.

The facts on which the phagocyte theory is based have been extensively confirmed. But it is yet an open question whether all bacteria are taken up by animal cells, or whether most of the parasites are not destroyed by extra-cellular chemical influences. Even if we admit the significance of the phagocyte theory, we must not overlook that the cells must act chemically on the parasites which they engulf. And if we regard, on the other side, the chemical theory of defense we must remember that the fluids of the body are secreted by living cells. There is hence not an absolute contradiction between the phagocytic and the chemical theories of protection.

A further insight into the nature of immunity was gained by researches made simultaneously in Japan by Ogata and Jasuhara, and in Berlin by Behring and Kitasato. It was learned that in certain instances, animals which have been made immune against specific bacteria have been thereby rendered refractory to poisoning with the chemical products of these parasites. These facts first determined in anthrax, tetanus and diphtheria, have since been found true also in pneumo-coccus poisoning. The tolerance to the tox-albumins of the diseases against which the animal has been vaccinated, depends on the presence of albuminoid substances in the blood which unite chemically with the tox-albumins, and render them inert. These protective albuminoids, or "anti-toxines" as they have been termed, do not exist in the blood of susceptible animals, but are formed in consequence of protective vaccination. If the blood of an immune animal or the isolated anti-toxines are added to a sterilized culture of the corresponding bacteria the mixture is no longer poisonous to normal animals. The action of the anti-toxines is, however, strictly specific and limited to the poisons of those bacteria under the influence of which they were formed in the body.

The quantity of anti-toxines produced in the vaccinated system corresponds to the degree of the immunity. This relation was elegantly demonstrated by Ehrlich[8] in researches on certain tox-albumins not of bacterial origin. From the castor bean, and from the jequirity bean albuminous bodies have been extracted which resemble the bacterial tox-albumins in chemical and physiological properties as well as in their extreme toxicity. Ehrlich found that a gradual administration of these poisons in harmless, but increasing doses resulted in tolerance of the system to their presence in large amounts. The degree of immunity, which would permit the protected animal to recovery from the ordinarily fatal quantity he stated numerically as immunity = 1. By continuing the experiment for weeks and months the animal could be made tolerant to ten times the minimal fatal dose, which he called immunity = 10, and by persisting, an immunity = 400 or exceptionally = 1000 could be obtained. The animals thereby became refractory both to the systemic poisonous and the locally irritant effects of the agents. The immunity in these cases depended likewise on the formation of anti-toxines in the blood and it could be demonstrated by experiments in the test tube that the degree of immunity was proportionate to the chemical power of the blood to neutralize the tox-albumins.

The neutralizing property of "immune" blood can be made use of in giving immunity to other susceptible animals. It is not necessary to mix "immune" blood with the poisonous bacterial culture in the flask but both can be injected into the susceptible animal in separate localities and *even at separate times*. The protective anti-toxines persist not only in the body of the animal in which they were originally generated but also in the system into which they have been introduced experimentally, at least for days and weeks. But in order to get efficient protection against infection or poisoning with bacterial products we must either employ a sufficient *quantity* of blood from a previously vaccinated animal, or we must get the blood from an animal with *a high degree of immunity*. The question comes down to a mathematical dosage in the light of Ehrlich's researches.

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[8] Deutsche Med. Wochenschrift, No 32 and 44, 1891.

The injection of anti-toxines will not alone *prevent* infection but it may even *cure* it, if it follows the infection within not too long an interval of time. This has been demonstrated on animals by Behring in diphtheria, Behring and Kitasato in tetanus, and by G. and F. Klemperer in pneumococcus poisoning, and by Emmerich and Fawitzki in pneumonia and swine-disease (rouget).

It is beyond the scope of a discussion on etiology to enter into the details of these most important studies, but no physician can fail to grasp their far-reaching significance. Based on these researches there are to-day on record *four cases of tetanus in man cured* by the administration of *anti-toxine* from the vaccinated dog.[9]

In a disease of even greater importance, viz., acute pneumonia, the attempts of G. and F. Klemperer[10] to cure by means of serum obtained from the vaccinated rabbit, were crowned with a result in six instances, which if not absolutely convincing in this affection, so capricious in duration, was at least highly suggestive of future success.

The importance of these truths must not be imperiled by hasty generalization. Anti-toxines are not the rationale of immunity in every disease. In the experimental infections produced by the vibrio of Metschnikoff, the bacillus of blue pus and the bacteria of swine plague, it has been found that the animal rendered immune against the parasites by protective vaccination is still susceptible to the poisonous action of the bacterial culture. Naturally immune animals also do not seem to owe their insusceptibility to anti-toxines. Thus Roux found the chicken refractory by nature against tetanus, but its blood contains no tetanus anti-toxine, although this is produced on injecting the tetanus poison into its system. Moreover, even in those instances in which the recovery of an infected animal depends on the development in the body of an anti-toxine, which protects the system against the bacterial poison, other agencies besides must be at work in the subsequent destruction of the parasites. For anti-toxines combine only with the chemical poison, but do not kill the living bacteria.

THE late Dr. Buckminster Brown, of Boston, has recently bequeathed $40,000 to the University of Harvard, for the foundation of a professorship of orthopædic surgery, to be called by the name of the testator.

REPORT OF THE SURGICAL CLINICS.

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College.

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(*Continued from page 354.*)

November 29, 1890.

FRACTURE OF THE NECK OF THE FEMUR.

This man fell from the top of a caboose in a railroad collision some time ago, and sustained an injury in the vicinity of the hip-joint. *When he came* in the hospital, we found the right leg rotated outwards, shorter than the other, and the foot everted. The latter symptom would point to a fracture of the femur; the shaft may be fractured, but that was excluded by not finding a false point of motion, hence we came to the conclusion that it was a fracture of the neck. Another symptom of fracture of the neck we find, is that the trochanter describes a smaller arc when rotated; for the reason that its centre of motion is the seat of fracture, while in the normal condition it is the acetabulum. Another symptom is that the trochanter major, when the fracture is extra-capsular, becomes broadened and enlarged. This sign becomes more apparent some time after the fracture. We have all the signs of an extra-capsular fracture *here in this case, viz.: age, direct violence, callus and* shortening. The sound limb now measures 35 inches and the injured limb $34\frac{3}{8}$ inches, which is considered a very good result; a shortening of only $\frac{5}{8}$ of an inch. When in an oblique fracture you get a shortening of not more than $\frac{1}{2}$ to $\frac{3}{4}$ of an inch, it is a very good result. The treatment in this case has been the extension apparatus by a weight and pulley, and the foot of the bed elevated, which was done to overcome the longitudinal deformity.

Continuous weight, and not the heavy weight, is the best for extension. The rotatory deformity or eversion is overcome by laying large sandbags along the outer side of the leg, and to obtain this result in this case we used the splint invented by Dr. Frank Hamilton, of New York.

FRACTURE OF THE FEMUR.

This man was hurt yesterday. While walking over a scaffold, he fell a distance of 40 feet, fracturing the lower jaw and falling on his feet, fracturing the femur. I find a fracture of the body of the inferior maxilla into several pieces. This is a very difficult fracture to keep in position. The ordinary way of treatment is to put on a pasteboard splint and apply a Barton's bandage, but a serious objection to this bandage is that it pulls the jaw backwards. Dr. LeMoyne, of this city, applies a dressing with adhesive plaster, which I like very well. It consists of a strip of plaster applied under the jaw, and the two ends fastened on top of the shaved head. I will apply it in this case. There will be no difficulty in feeding him, because his front teeth are out.

You will now please notice the position of this limb; it is abducted and rolled outwards. By measurement I find the sound leg 33 inches in length, and the injured one $31\frac{1}{2}$ inches—a shortening of $1\frac{1}{2}$ inch. I raise the limb, and by gentle manipulation I find a false point of motion at the middle third of the thigh.

The displacement of the upper fragment in fracture of the shaft is forwards, by the action of the psoas and iliacus. The limb is shortened by the lower fragment being drawn upward and backward by the action of the rectus, biceps, semitendinosus and semibranosus.

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[9] Schwartz—Centralblatt f. Bakteriologie, Vol. X, No. 24. Gagliardi, quoted by Schwartz. *Pacini*, abst. in Brit. Med. Journal, Jan. 23, 1892. Epitome, p. 15. Finotti, abst. in Brit. Med. Journal, Feb. 6, 1892. Epitome, p. 23.

[10] Berliner Klin. Wochenschrift, No. 34 and 35, 1891.

Formerly the treatment of fractures of the femur was done by the double inclined plane, to relax the muscles. Experience has proven that all fractures do best in straight splints.

The manner of extension now employed is made by the weight and pulley, fastened to the leg by adhesive plaster, and by raising the foot of the bed for the counter-extension. To Dr. Gordon Buck we are indebted for this method of making extension.

The old method was accomplished by a long splint and a perineal band, which greatly annoyed the patient and irritated the parts, causing ulceration and sloughing.

When plaster is applied to the skin, the mole-skin plaster should always be used, because the ordinary rubber plaster usually blisters the skin. Fultman's slide is an apparatus that is much used in Germany, and which I have found to give good satisfaction. The leg is bandaged to the sliding part and the foot to the footboard, which prevents its eversion. This rests on a track, or slide, and the weight is applied.

FRACTURE OF THE FEMUR ABOVE THE CONDYLES.

This old gentleman sustained a fracture of the femur just above the condyles, some time ago. Bony union has now taken place, and he is able to bear his weight on it; but the lower end of the upper fragment is pushed down to the patella, and I find by measuring that there is over an inch of shortening. The union is perfect; but I simply show it that you may see what little negligence will cause a deformed union.

AMPUTATION OF FINGERS.

This gentlemen is a railroad brakeman, who had his left hand smashed between the drawheads about a week ago, while coupling cars. It is a case of Dr. McCann's, and, I believe, requires the amputation of some fingers. Had it been possible to tell at the time of the accident how much of the hand would be useless, Dr. McCann would have removed it, and thus saved him a week's suffering; but he used conservatism in this case, and tried to save as much of the hand as possible. It can only be determined in a week or two, in such injuries, which is living and which is dead tissue. This hand has my friend, Prof. McCann's, favorite dressing applied, namely: iodoform, which reminds me of the stanza:

> "You may break, you may shatter the vase if you will,
> But the fragrance of the roses lingers there still."

I find that the middle finger is dead, and the metacarpo-phalangeal joint is opened. In amputation of the fingers or toes, it is best always to make your flaps from the palmar and plantar surfaces, but in this case we are obliged to obtain the flap from the back of the hand. I have now amputated the index and middle fingers at the metacarpo-phalangeal joints; the ring finger at the joint between the proximal and middle phalanges; and the little finger at the joint between the middle and dictal phalanges. This hand will now have the antiseptic dressings applied, and the patient put to bed.

December 6, 1890.

TREPHINING FOR EPILEPSY.

Gentlemen, we have here this morning a very interesting case.

This young man, Robert Bierer, æt. 19, when 7 years of age, was struck on the head with a horseshoe accidentally, by an older companion who was using horse-shoes for pitching quoits. Shortly after this accident, the boy fell from a hay-mow and sustained a wound near the other, over the right parietal bone. When he was 12 years old, he began to develop epilepsy, having paroxysms at long intervals then.

He was admitted to the hospital on October 13, 1890, and was then having fits almost every day. They would occur in the morning immediately after arising from bed. After his admission here, he was given bromide ammonium, gr. 15, and ext. belladonna, gr. $\frac{1}{16}$, four times daily. This for a time did much good, lessening the attacks considerably; but they are now getting more frequent again.

Epilepsy is a condition characterized by paroxysmally losing consciousness and having convulsions. To have a real case of epilepsy there must be, first, a sudden loss of consciousness; and second, convulsive movements of some parts of the body. The most common form is idiopathic epilepsy, which occurs at all ages, but more frequently at the age of puberty. Epileptic attacks in which the convulsions are slight, constitute that form which is called mild epilepsy, and by French writers *le petit mal.* The common form, with general convulsions, and the more grave of the two forms, is called *epilepsia gravior*, or *le grand mal.*

It is a very frightful sight to witness an attack. The patient is taken suddenly, falling as if from a blow, and before falling gives issue to a peculiar cry, which once heard is never forgotten. The patient always falls forward, hence called by some "falling sickness." He loses consciousness and then is thrown into a tonic spasm, which soon becomes clonic.

The sterno-cleido-mastoid is sometimes contracted, drawing the head to one side. The tongue is sometimes caught between the teeth, and is wounded by the tonic contractions of the muscles of the lower jaw. The pupils are dilated; there is stertorous breathing. The masseter muscles are convulsive, and foamy saliva, commingled with blood, dribbles from the mouth. The paroxysms continue for a period from one-half to three minutes, when the patient gradually passes out of this state, opens his eyes, looks around confused, and it is some time before he knows where he is and answers to questions. As many as one hundred paroxysms may occur in twenty-four hours, or they may occur as seldom as once in five or six years, depending on the gravity of the disease.

The pathology of this disease is not understood, except when caused by intracranial lesions, as tumors, syphilitic affections and fracture of the cranium. Some irritation of the brain, cord or peripheral nerves is a cause of some of the cases. A very common cause is some trouble of the genito-urinary apparatus—for instance, phimosis, which can easily be cured by circumcision. Stone in the bladder is a supposed cause, also. When due to traumatic causes, causing pressure on the brain by a depressed fracture of the table of the skull, or spicula of bone, trephining is the proper thing to do. Even an injury to the scalp has caused the disease, and been cured by removal of the cicatrix of the scalp.

It is a question whether in this boy's case it is idiopathic or traumatic. Medication has been faithfully tried in his case with no good results, and hence we are justified in opening the skull and earching whether a spicula of bone is pressing on e brain. Injuries or irritation over the parietal one are the *most liable to cause* this disease; injuies in this vicinity are over the fissure of Rolando, hich separates the ascending frontal and ascending arietal convolutions of the brain.

There are a number of methods of determining on he scalp the position of the fissure of Rolando. The ost simple one, I think, is that of Mr. Hare, who, y a number of experiments, finds the upper end of he fissure can be determined by measuring from the labella over the top of the head to the inion or exernal occipital protuberance; then the point onealf inch posterior, to the point midway between the labella and inion would mark the upper extremity f the fissure of Rolando. This point being marked, f a line be drawn downwards and forwards at an ngle of 67½ degrees, it will give the upper two-thirds f this fissure.

Mr. Horsley has devised to fix this important fissure, strip of stout paper with a second strip fastened to its middle at an angle of 67½ degrees. The long median strip is marked by a scale of quarter inches, both backward and forward, and Dr. Morris J. Lewis suggests that the zero-point of which, between the wo scales, should be half an inch in front of the second strip. Then by placing the long strip in the nedian line of the head, so that the figures of the scale are the same at the inion as at the glabella, the second or lateral strip will then mark the upper twothirds of the fissure of Rolando.

In this case we will not hunt for this point, but will trephine at the point where the scar is. In operations of this kind, the strictest antisepsis should be observed. The motor centres are localized in the ascending frontal and the ascending parietal convolutions. This boy's convulsions are unilateral; it is a desperate condition, because such a boy or man is not fit for many occupations, as a carpenter or mason, for instance, on account of the danger of falling.

Epilepsy is one of the diseases often feigned by malingerers. Soldiers are a class that often simulate it to escape duty. To determine such a case, it must be observed if there was a cry previous to the fall; if the fall be forward on the face; if the pupils are dilated and insensible to light; if there is foaming at the mouth; if the tongue is bitten.

Persons with this affection may fall on the street and be arrested and taken to the lock-up for being drunk, much to the chagrin of the poor unfortunate and his friends. There is not much to be done during the attacks, but to put something between the teeth to prevent biting the tongue, and turning the patient on his side so that the tongue falls forward and does not obstruct the breathing; for the same reason the tongue is pulled forward when anæsthetizing a patient.

Of the various remedies administered for this disease, those of most repute are: the preparations of silver, especially the nitrate; oxide of zinc, belladonna, and bromide of potassium.

Brown-Séquard's mixture, which is a very noted remedy, is as follows:

℞	Potassii iodidi,	8 parts.
	Potassii bromidi,	8 "
	Ammonii bromidi,	4 "
	Potassii bicarb.,	5 "
	Inf. Columbo,	360 "

Sig.—One teaspoonful before meals and three dessertspoonfuls on going to bed.

The objection to the use of nitrate of silver, when used for any length of time, is the coloring of the skin to a permanent blueness. To prevent this, the remedy should be intermitted at times.

The boy being now anæsthetized, I will begin the operation; the head, as you see, is shaved; I make a curved incision down to the bone, the curve being downward so that the wound will drain well when closed. The different forms of making incisions of the scalp for trephining are the crucial, the horseshoe shaped and the T incisions.

The scalp is very vascular, and consequently there is considerable hæmorrhage. After turning up the scalp, I control the hæmorrhage. Now I raise the pericranium at the point where the trephine is to be applied, and it feels as if there was a depression there. I now proceed slowly and carefully, and from time to time testing the depth made by means of a tooth-pick. I have now removed the button with an elevator.

I don't find any spiculæ of bone here, but it is necessary to search around the trephined opening as far as you can without doing any damage, because spiculæ are sometimes at some distance from the place indicated by the scar on the scalp; but I fail to find any.

Some surgeons would open the dura mater, but as there is no evidence of anything underneath it, I will not open it, because it would very much more endanger the boy's life. In some cases the button of bone is put in its place again, and sometimes it is broken up into fragments and placed back, but in this case, where we desire to relieve pressure, it is better not to put it back. Irritation about the genital organs is the most common cause of epilepsy, due to peripheral irritation outside the brain. I have not questioned this boy myself, but I am told that he practices masturbation some, hence that may be the cause. I insert a drainage tube, and close the wound with wire sutures. It will be dressed antiseptically, and I will report to you the result.

December 13, 1890.

Gentlemen:—You remember this boy on whom I performed the operation of trephining. He has had no paroxysms of epilepsy since the operation, which is as long as he has ever gone without a convulsion. It is, however, too soon yet to predict a cure. You notice how well the scalp wound has united; we have about secured union by first intention. You remember the trephine was applied over the fissure of Rolando, on the right side, because that is the center of motion, and that was also the position of the injury he had received when seven years of age, by being hit with a horse-shoe. You notice there is no suppuration whatever, which proves that antisepsis has been thoroughly carried out.

I will bring him before you from time to time and show you the improvement in the case.

OPERATION OF TREPHINING IN CONVULSIONS.

This man, Robert Lloyd, æt. 23, a millman by occupation, has always been a healthy man. Three weeks ago he was hit on the right side of his head with a poker, making a scalp wound, but no depression could be felt. Since that he has been having convulsions every day, and has had as many as twenty-four convulsions in twenty-four hours. He has no loss of motion, although he complains of numbness of his left side. There is paresis of the right internal rectus muscle, causing strabismus; the pupils are unequal. This wound points to a lesion over the middle frontal convolution about the middle of the fissure of Rolando.

There are different methods of marking the line of the fissure of Rolando, which I explained to you at our last clinic.

In this case I measure from the glabella or the elevation between the eye-brows, back over the head in the median line to the external occipital protuberance, which I find is 12 inches; one-half of this distance is 6 inches and one-half inch posterior to the middle marks the upper extremity of the Rolandic fissure, which I mark with tincture of iodine. It is my habit to cut out a stiff piece of paper with a scale of inches marked thereon, and having the inches marked toward the two extremities of the paper from the middle of it, or zero. To this paper is attached an arm, one-half inch posterior to its middle or zero, which projects downwards and forwards at an angle of 67½ degrees and which arm shows the position of the upper two-thirds of the fissure of Rolando. I apply my paper here and mark along the arm with tincture of iodine.

This patient was sent here by Dr. Clark and admitted to the hospital four days ago. I propose, today, to trephine over the middle frontal convolution and the fissure of Rolando. We may find a spicula of bone or clot of blood, but if we find nothing we may still relieve pressure and thus benefit the patient.

A year ago we had a young colored man here in the clinic, whom some of you saw. He fell from a height while carrying brick and injured his head, causing paralysis of the right side of the body. He lay for ten months helpless on his back, getting a number of bed-sores and was indeed in a pitiable condition. I trephined the skull before the class and removed a cyst. In 24 hours he was able to move his leg and in two weeks after the operation he walked into this amphitheater. This was one of the most remarkable cases I ever heard of.

The patient being now anæsthetized, I will make a T incision here so as to get down to the skull where the wound was inflicted as well as to reflect the scalp over the Rolandic fissure. I remove the pericranium under the point of the scalp wound, but find no fissure or depression there, hence we will go near the Rolandic fissure. Care must be taken not to go too near the median line with the trephine, for in that region you may injure the longitudinal sinus.

I apply the trephine and have now removed the button of bone. It will always be your duty to search around the opening made by the trephine, with a flat probe, for it has been found in some cases that spiculæ of bone are, sometimes, at some distance from the point of injury. I find no spicula of bone and the dura mater is about the normal color, with the exception of being slightly injected.

I do not see sufficient reason to go through the dura mater and hence will put up the wound with the hope that we will do him good by relieving pressure.

I insert a drainage tube along both incisions of the Y incision so as to obtain thorough drainage. I sew it up with continuous sutures; these sutures should not be used unless you provide for draining the wound well, because they will not allow the escape of fluids.

I apply the antiseptic dressing and bind them on with a four-tailed bandage. We will see what benefit, if any, is to be derived from this operation in two or three weeks, and if no benefit is derived we will then consider the advisability of opening the wound and going through the dura mater.

OPERATION ON A CRUSHED HAND.

This man while coupling cars two weeks ago had his right hand crushed, and it is one of those very frequent accidents that we see here. Some surgeon had charge of this case and had made an attempt to save the hand. He was sent here yesterday, when I first saw it. My custom is to remove at once the parts that are to be lost and if that had been done in this case it would have spared him a great deal of pain and suffering.

As the first phalangeal joint, only, is crushed, I could amputate it at the middle phalangeal articulation, but the stump thus left would not be of any use and would always be extended because there is no special flexor tendon for the proximal phalanx, hence it is better to go at once to the metacarpophalangeal joint in such cases in the middle fingers; but in the fore-finger I would always preserve as much as possible, even a part of a phalanx so as to afford more opposition to the thumb.

While an assistant compresses the radial and ulner arteries, I will amputate the finger at the metacarpophalangeal articulation. I will do it by the oval method, commencing the incision on the prominence of the knuckle, on the back of the hand, and extending the incision obliquely downwards between the fingers and through the web across the palmer surface of the finger and obliquely upwards to the point of commencement. It is then disarticulated by cutting the lateral ligaments. I now put in a drainage tube and sew up the flap with continuous sutures. This hand will be dressed in the usual manner, with antiseptic dressing. In addition to the unnecessary suffering this man has had by delay in amputating, he also run the risk of contracting septicæmia.

A word in regard to anæsthetics: In this hospital we generally use the "A. C. E. mixture," which is recommended by the American Medical Association. It is composed of alcohol one-sixth, chloroform two-sixths, and ether three-sixths. We have never lost a patient on the table, although ether may kill a patient in two or three days after its administration, if affected with Bright's disease.

There is no doubt but that chloroform, when carefully and properly administered, is as safe as ether. It is more pleasant and prompt in its action and produces much less vomiting. It is considerably used for young children and in obstetrical practice.

December 20, 1890.

DISLOCATION OF THE HUMERUS.

Gentlemen: I want you to notice the right shoulder of both these men before you. The one slipped and fell on the sidewalk four weeks ago, striking on the upper part of his arm. He went to a physician, as he states, who anæsthetized him, manipulated the arm, and gave him something to rub on it. The second man fell on one of the streets of this city on the day after Thanksgiving. He felt some trouble in his shoulder some time afterwards. What do you see at the shoulders of these two men? You see the prominence of the acromion process, flattening of the shoulders, and so forth.

Let us now take up the symptoms of dislocation of the shoulder in a systematic manner. The symptoms are subjective and objective. The subjective symptoms which are the signs of dislocation, we have in both these cases, and they are the same as in fractures, viz.: History of the accident, pain, and loss of function. The objective symptoms common to all forms of shoulder dislocation are: flattening of the shoulder, prominence of the acromion, depression immediately beneath the acromion, the presence of the head of the bone in a new situation, deformity, Dugas' test, and Callaway's test.

The four principal varieties of luxation of the humerus in the order of their frequency are: 1. Subcoracoid; 2. subglenoid; 3. subspinous; and 4, subclavicular. The dislocation of the shoulder is the most common one in the body, and it is said to occur as frequently as all the other dislocations combined.

In the first form, the head of the bone is found beneath the coracoid process; this is the most common form of luxation of the shoulder joint. In the second form, subglenoid, the dislocation is downwards into the axilla, the head of the bone rests below and slightly in front of the glenoid cavity. In the third variety, subspinous, the dislocation is backwards on the dorsum scapular, beneath the spine, where the head of the bone can be felt. In the fourth variety, subclavicular, the bone is displaced forwards against the coracoid process and is described by Sir Astley Cooper as a partial luxation.

(*To be continued.*)

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Pediatrics.

Dr. William P. Northrup, Chairman.

Meeting of February 11, 1892.

A case of spina bifida was presented by Dr. A. Jacobi. The patient was two months of age, and the tumor, which was present at birth, growing rapidly. The wall was becoming thin over the central portion, and without operation would soon burst, and the child die. There was also talipes valgus, and the sutures and fontanelles were very large.

A demonstration was given by Dr. M. Putnam-Jacobi to prove the fact that when the lung is collapsed percussion yields tympanitic resonance, but when extremely inflated exaggerated pulmonary resonance.

Discussion on diphtheria.

Dr. Joseph E. Winters read a paper entitled

THE BEST APPARATUS AND BEST DISINFECTANT FOR USE IN MOUTH AND NOSE.

The author assumed that the disease is caused by the Klebs-Lœffler bacillus; that it is primarily a local disease, the microbe elaborating in the exudate a poison which is absorbed and carried into the circulation, the germ itself not being formed in the blood or tissue. A point of vast importance in treatment is the fact that the specific germ on a perfectly healthy membrane does not provoke diphtheria. The primary indication, then, is not only to cleanse and disinfect the parts, but to destroy the germs *in situ*.

The activity of the Klebs-Lœffler bacillus is impaired by even weak solutions of carbolic or boracic acid. The practical deduction is, that at the outset we should attack the exudate or culture soil in order to prevent the microbic products from producing constitutional results. It is never safe, however, to employ means that will irritate the surrounding parts, for fresh points of infection are thus made. The only means of satisfactorily disinfecting the throat and preventing sepsis is by irrigation.

For this purpose the child should be placed on the side of the crib, and the rubber sheet arranged to catch the drippings, but he should under no circumstances be lifted from the horizontal position. If a Davidson syringe be used the cleansing will be more complete and will meet with less resistance than with any other apparatus. The irrigating should be done through the nostrils, for they cannot be tightly closed like the mouth, and with the first flow of fluid from the nose into throat the mouth is opened, and everything is discharged through the nostrils and mouth. It is occasionally necessary to syringe through the mouth. In this case the tip should be removed and the tube pass along the inner side of the cheek behind the last molar to the pharynx. In ordinary cases irrigation every two hours is sufficient. In severe cases it must be practiced every hour day and night.

For this irrigation nothing has proved as satisfactory as a ten per cent. solution of peroxide of hydrogen or a saturated solution of boracic acid. The passages must be thoroughly cleansed at each washing, and one pint of solution will be required. In the local treatment of diphtheria is included medicated steam from a croup kettle, and the inhalation of sulphurous acid gas through the burning of sulphur candles. For medicating the water in the croup kettle, add to one pint of water one ounce of spirits of turpentine and two drachms of oil of eucalyptus. In the use of the kettle plenty of rubber tubing is necessary, and the gas stove is the best means of generating the heat.

Dr. H. D. Chapin read a paper on

QUARANTINE AND DISINFECTION IN LIMITED APARTMENTS.

The management of diphtheria in tenement houses formed the chief subject of consideration. The furniture should be removed as far as possible and the child placed on a cheap cot instead of a bed or sofa. The mother, if she must also attend the rest of the family, should wear a wrapper which can be removed upon leaving the room. The area of contagion when ventilation is good, is small, probably but a few feet. If the germs can all be destroyed *in situ*, there will be no contagion. Old cloths or pieces of cheese cloth should be used about the patient and burned as soon as soiled. All articles of bedding should be shaken on the roof and exposed for a considerable time to sunlight and air, the two most powerful antiseptics at our command. The walls should be washed down with a sublimate solution, one to one thousand, and the same should be used in sinks and closets. Papered walls may be cleaned with stale bread crumbs. The burning of sulphur, while it may not be a great efficiency, is undoubtedly of some value. It leads to thorough subsequent ventilation at least. The throat and nasal passages of the other children of the family should be frequently sprayed with mild antiseptic solutions.

Dr. L. Emmett Holt read a paper upon

FEEDING IN DIPHTHERIA AND METHODS OF FORCED FEEDING.

In a disease like diphtheria, where the principal cause of death is asthenia or exhaustion, no question can exceed in importance that of nutrition and stimulation. The most common error in this direction is over-feeding, and over-stimulation during the first few days. It too often happens that when the critical period arrives the over-burdened stomach refuses to do its work. The subject may be considered under three heads: 1. Character of food and stimulants. 2. Frequency of administration. 3. Forced feeding.

As to character of food, little need be said except to condemn two articles frequently allowed, ice cream and jellies, which interfere with taking more valuable food. The main reliance must be upon milk diluted according to the age of the child. Next to milk, beef broth, mutton broth, expressed beef juice, soft boiled eggs, milk toast, wine whey, oat meal, or barley gruel. Junket with a little wine added and Kumyss, when the child will take it, are valuable additions to the list.

In regard to the stimulants, brandy is best, but we must be guided by the child's whims and give what he will take best.

Experiments with stomach washing show that the stomach is rarely empty sooner than two hours after the meal. It is a safe rule never to give food requiring digestion oftener than this. Sitmulants and pre-digested food may be allowed at shorter intervals. The quantity of food given should be somewhat less than the child would take in health. It is best not to begin stimulants until they are indicated by the pulse or prostration, but they should then be pushed until the desired effect is produced, the only limit, in many cases, being the tolerance of the stomach. Unlike food,they should be given in frequently repeated doses. A careful record of the exact amount of food taken and retained should always be kept that we may know where we stand.

It sometimes happens that the child absolutely refuses all nourishment and stimulants. Coaxing, threats and commands are alike futile. Efforts to compel the child to take milk in teaspoonful doses result in the wasting of an immense amount of strength, while little or nothing is accomplished. It is at this juncture that the question of forced feeding arises. Rectal feeding in young children, owing to irritability of the sphincter, is almost impossible. Much more efficacious and with far less disturbance to the patient is forced feeding by the mouth or nose. The difficulties are surprisingly small. The ordinary apparatus for stomach washing is all that is required, the method of procedure being the same as in that process. Unless there is much resistance the mouth is to be chosen. Completely peptonized milk is to be preferred. The operation should be repeated once in four hours. In this way a proper amount of nutriment can be introduced with far less worry and resistance than by the spoon method.

The operation was demonstrated upon a child of ten months, a sufficient amount of milk being introduced in about ten seconds.

Dr. A. Jacobi spoke upon the subject of Constitutional Treatment in Diphtheria. He has been convinced of the value of bichloride of mercury in all forms of the disease, especially the laryngeal. He gives it in large doses. A child of six months will take a quarter of a grain a day with no untoward symptoms. Diarrhœa is rare and is quickly checked by a few drops of paregoric. Stimulants should not be delayed until signs of heart failure appear, for when that condition has once developed the patient is almost certainly lost. Very large doses are sometimes required, and they should be increased until an effect is produced. The doses of digitalis, camphor and alcohol as stated in the text books are no guide whatever. If rejected by the stomach they should be given hypodermically. One part of camphor dissolved in four parts in sweet almond oil may be given hypodermically with but slight local disturbance.

Dr. August Seibert demonstrated his method of Submembranous Antiseptic Injections. If the Klebs-Loeffler bacillus generates a poison within and underneath the pseudo-membrane, that is the place to attack it. He has therefore devised an implement consisting of a number of hypodermic points set closely together on a small disc by which an antiseptic may be injected beneath the membrane. As an antiseptic, he employs very strong chlorine water. The method has now been in use eighteen months with strikingly surprising results. It is designed to supplement, not to displace other local treatment. The injections being made but once a day, one or two, as a rule, being sufficient.

Dr. Beverly Robinson inquired if fluid introduced into one nostril did not usually pass out by the other. Dr. Winters replied that in young children a portion passes by the mouth. Dr. Vineberg approved of sulphurous acid gas as it gives marked relief to the patient.

Dr. J. Lewis Smith said that he used a stronger solution of peroxide of hydrogen than that proposed by Dr. Winters. Stronger solutions can be used in the throat than in the nose.

Dr. Stowell said that the strength of the solution must be graded to suit the case. Peroxide of hydrogen, if too strong, will cause irritation.

Dr. Holt said that in a personal trial he had found a ten per cent. solution too strong for comfort.

Dr. C. W. Allen described a screen of plain glass which he had seen used in Germany. It is held before the face of the patient during the examination of the throat. It does not obstruct the view and is an admirable protection to the physician if the patient coughs.

The Chairman urged that inasmuch as we now know the specific germ which causes diphtheria, and its habitat, that we definitely consider what remedies are for its destruction, and what are for the simple comfort of the patient; that the physician spend his time destroying the germs which are thrown off directly from the patient's mouth and less to blaming sewer gas and germs constantly floating in the air.

Dr. Fischer had made a series of examinations in tenement houses and had found the specific bacillus in the air in a number of instances. In one house four cases developed on different floors along the same line of pipes.

DR. FLOYD M. CRANDALL,
Secretary.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopædic Surgery.

Stated Meeting, February 19, 1892.

HENRY LING TAYLOR, M.D., CHAIRMAN.

Dr. W. R. Townsend presented a girl, 14 years of age, with rotary lateral curvature. At the age of 3 years, and after whooping cough, she developed an empyema on the left side, which opened spontaneously. These sinuses continued to discharge for five years, and the three cicatrices, one to the left of the nipple, and two slightly below and to the right, show the points where the openings occurred. When five years old, it was noticed one morning, that there was a complete loss of power in the left upper extremity. The mother said that there had never been any curvature of the spine before the attack of paralysis, although the child always slept on the left side, and that the curvature has been steadily increasing since then. The circumference of the chest at the nipples, is 24 inches, the right side measuring 15, and the left, 9 inches. There is a very marked lateral rotary deviation of the spinal column to the right, extending from the seventh cervical to the tenth dorsal, with compensating curves above and below. There is no torticollis. The breathing space is good, considering the amount of the deformity. The heart is not displaced. There is complete loss of reaction to faradism in the left supra- and infra-spinatus, and in the deltoid, and a reversal of the formula with the galvanic current. There is no anæsthesia, but marked atrophy of the shoulder and upper left arm. There is a partial loss of reaction in the pectoral, but the biceps, triceps, and forearm muscles react well.

The interesting feature was the relation of the rotary curvature to the empyema and the poliomyelitis. His own opinion was, that the empyema probably caused a slight curvature, and that the paralysis had helped to increase it, but that there was no connection between the empyema and the paralysis; in other words, the paralysis was not produced by the scoliosis, but was separate and distinct, and due to a poliomyelitis. He had presented the case, chiefly because it was of interest in connection with the first paper announced for the evening.

Dr. Royal Whitman also presented a little girl as an illustration of a pure rotary lateral curvature caused by anterior poliomyelitis.

Dr. H. H. Berg said that he had had an opportunity of seeing this patient, and had obtained a somewhat different history. According to this version, the patient was still in bed with the empyema, when the family first noticed that she was lying more upon the left side. The occurrence of the paralysis was sudden, and the attending physician allowed her to get out of bed, and at this time, the extreme lateral curvature was first noticed. If this curvature were the result of the poliomyelitis, it would not have been so extreme at this early stage, for it takes time for muscles to contract and cause deformities. In this case the paralyzed muscles are on the left side of the body, and the primary curve toward the right, while in cases of lateral curvature due to paralysis, the healthy muscles must necessarily be on the concave side of the deformity. The only way in which poliomyelitis could possibly produce a curvature on the concave side of the deformity, would be in the third stage of this disease, i. e., in the third or fourth year after the paralysis, when the muscles begin to contract into firm fibrous cords.

Dr. Royal Whitman thought if the long supporting muscles were paralyzed, it might be as the previous speaker had said, but in these cases where only the muscles supplying the shoulder were paralyzed, one would expect the curvature to be toward the opposite side.

Dr. Berg replied, that the intrinsic muscles are not alone paralyzed in this case. Lateral curvature must follow contraction of the intrinsic muscles of the spine, and not of the long muscles.

Dr. R. H. Sayre had seen a number of cases of lateral curvature dependent upon poliomyelitis with paralysis of the external muscles on the concave side, and hence, he thought, the statement that the convexity is always on the side of the paralyzed muscles, could not be accepted without qualification. He had been surprised that German writers took it for granted that empyema curves are not rotary.

Dr. S. Ketch was not prepared to endorse the view that the curvature was mainly due to the empyema; on the contrary, he thought the patient had that form of curvature usually found as a result of anterior poliomyelitis. Undoubtedly the empyema tended to exaggerate this curvature.

Dr. N. M. Shaffer said that so far as he knew, *the first* reported case of lateral curvature due to poliomyelitis, had been published in his book, in 1876 or 1878. That case had been examined by Dr. Seguin, Dr. Draper, and himself, and they had found the paralysis on the hollow side. On general principles, he believed that Dr. Berg was correct in his statement. In 1881, he had called attention to the fact *that a* rotary element existed in empyemic curves. It was exceptional for him to find a lateral curvature of the spine, due to empyema, which was not associated with a greater or less degree of rotation. The error probably arose from the fact that Dr. W. J. Little, of London, who first described it, made this mistake, and other writers had perpetuated the error.

Dr. Mary Putnam Jacobi called attention to the monograph by Eulenberg, on lateral curvature of the spine, in which he states very catagorically, that in ordinary typical cases of lateral curvature, the muscles on the concave side are necessarily the stronger and explains on this principle, the mechanism of the production of lateral curvature. His idea is, that it is due to a disturbance in the balance of the muscles of the two sides, whether extrinsic or intrinsic.

Dr. A. B. Judson said that in his earlier studies of lateral curvature, he had adopted, without due verification, the statement of foreign observers that rotation is absent from the curvature caused by pleural disease. At present, he believed that it does not occur, but in a very modified and unimportant degree. The collapse of the chest wall would weaken the action of some of the muscular and fibrous structures which cause rotation by holding the spinous processes nearer the median line than the bodies of the vertebræ. For this reason, we may well expect the rotation to be less marked. In the case shown, there is little difference in the diagonal diameters, which is the chief feature of rotation, and is caused, in an ordinary case, by the prominence, posteriorly, of the right back of the chest and the complementary prominence, anteriorly, of the left front of the chest. Here we have prominence front and back on the right side, and depression front and back on the left side, with but little difference in the diagonal diameters, a condition very unlike the effect of rotation. Still there may be, and probably is, some rotation in the vertebral column of this patient, although its effect on the deformity is not easily recognizable.

Dr. Townsend said, that owing to the fact that in this case, one was compelled to rely wholly upon the varying statements of the parents of the child, who were not very close observers, it would be well to be cautious in drawing conclusions from a study of this case alone. He did not agree with Dr. Berg as to the relation of the paralyzed muscles to the concave side.

VOLUNTARY SUBLUXATION OF THE KNEE PRODUCED BY MUSCULAR ACTION.

Dr. R. H. Sayre showed a child of fourteen months, presenting this condition. The mother first noticed this condition when the child was eight months old. When he was excited, the right knee is pushed in and out with a distinct click. The child was born after a normal labor, and there was no history of injury. He proposed to apply a splint, in order to retain the knee in position.

AN APPLIANCE FOR THE PREVENTION OF DEFORMITY IN HIP DISEASE.

Dr. Whitman presented a case illustrating this appliance. He believed that the long traction brace was the most useful appliance in these cases, for it assured us a perineal crutch, a protection which could not be removed on the patient. This was the principal objection to any brace which depended on axillary crutches for its usefulness. Simple fixation of the joint, allowing the patient to walk about on the affected limb, as practiced by Thomas and others, did not afford this protection, which he considered the most important element in the treatment of any joint affection. On the other hand, with the simple long traction brace, gradual and increasing flexion of the leg was a very common and troublesome complication. This was the weak point of the brace, and the one most constantly attacked by its opponents. He had therefore attempted to combine the merits of two braces as follows: The limb having been brought into perfect position, a slender steel bar attached above to an encircling thoracic band, and terminating just above the knee in a thigh band, was closely applied along the posterior aspect of the joint, after the manner of Thomas. The long traction brace was then applied as usual. Thus flexion was prevented, additional fixation assured, combined with effective protection. By dividing the function of the two braces, the posterior or miniature Thomas brace could be made very light and comfortable; it, however, was not to be used as a lever to correct deformity. This should first be overcome by traction in bed or otherwise. He believed this division of labor to be more practicable than the addition of perineal bands and traction to the ordinary Thomas brace, as suggested by Lovett and De Pass.

Dr. Judson commended the use of one apparatus, the hip splint, to protect the joint, and another, the antero-posterior lever, if apparatus is necessary for this purpose, to oppose flexion. In general, it is better not to attempt too many things by one and the same apparatus. He thought the antero-posterior lever, for combating flexion and maintaining fixation, was the essential element of the Thomas splint.

Dr. Shaffer said that where supplementary apparatus is employed to limit the motion of the dorso-lumbar spine, and the motion on the acetabulum, unnecessary traumatism was inflicted upon the acetabulum. He had studied this subject quite closely, and in his opinion this motion of the dorso-lumbar spine is one of the greatest aids in the treatment of this condition. It was better to treat flexion by recumbency and rest until the flexion is overcome, than to apply an apparatus which antagonizes the very strong action of the flexor muscles.

Dr. Whitman said he recognized the force of what Dr. Shaffer had said about the flexibility of the lumbar spine, but he was inclined to think that the motion of the diseased joint which the simple traction brace permitted, and the deformity which it did not prevent, were more important considerations than the theoretical objection which Dr. Shaffer had presented. This fixation apparatus was applied before there was any flexion, and in the case presented there was no spasm of any of the muscles.

Dr. H. W. Berg read a paper entitled

DOES SCOLIOSIS EVER GIVE RISE TO PRESSURE MYELITIS?

Dr. R. H. Sayre thought there was no doubt that the differences in mammary development observed in cases of rotary lateral curvature were the result of trophic change, but the cause of this disturbance was still uncertain. In advanced cases he had been inclined to attribute this disturbance to pressure on the nerves at their exit from the bony canal. Pathological specimens showed not only a narrowing of the bony canal, but also large exostoses at the points where the vertebræ join; it was quite possible that these might project inward as well as outward.

The case described in the paper had at one time been under his care, and he had considered it as closely resembling disseminated sclerosis, although it was not typical of any diseased condition with which he was familiar. Dr. Spitzka had held the same position. The case had been diagnosticated as lateral sclerosis by one neurologist, and as hysteria by another eminent neurologist, who had employed hypnotism upon the patient, though unsuccessfully. She had been referred to the speaker with the idea that there was some pressure on the cord at about the tenth dorsal vertebra, which might possibly be relieved by a surgical operation. He had been unable, however, to detect any mass pressing upon the cord, and from the effects of momentary suspension, he did not think this method of treatment would prove beneficial. He did not associate the cord lesion with the lateral curvature. The trophic changes were probably due to the disturbance of nutrition external to the cord.

Dr. Shaffer considered that the author's case of lateral curvature differed only in degree from almost every case of this condition. It was rare to find lateral curvature without an exaggerated tendon reflex, a non-deforming club-foot, or various trophic changes, and the latter occur in incipient cases, before there can be any pressure on the cord. Girls suffering from lateral curvature are usually peculiarly nervous, and oftentimes seem to assume the responsibilities of their entire family. This is the direct result of the central nervous lesion, one which pertains more to the psychial condition than to the spinal cord condition. Our clinical studies drive us by analogy to look in the motor tract of the brain for the cause of the condition.

Dr. Ketch looked upon the trophic changes as an element in the etiology of lateral curvature, rather than the result of this condition. It was probable that at a very early period in life, there was a disturbance of the nervous system, most probably of the brain, which produced the lateral curvature. Boys having lateral curvature, show atrophy of the limbs, but the general nervousness is not so marked. For example, he had at present under observation, a robust boy, fifteen years old, with lateral curvature, who was supernaturally strong and supernaturally slow and apathetic. He thought it highly improbable that pressure myelitis ever occurred in these cases.

Dr. L. W. Hubbard could not understand how the paraplegia of Pott's disease could be said to be due to cord pressure from change of position, as clinically it seemed to bear no relation to the amount of curvature, or the situation of the lesion, and it was present when there was no curvature, and moreover, recovery took place without any change in the curve of the spine. He saw nothing in the case reported. analogous to the myelitis of Pott's disease.

Dr. Judson would eliminate muscular contraction as a factor in the causation of lateral curvature, believing that rotations and the curvatures, primary and secondary, are only the mechanical result of muscular failure to sustain the weight of the trunk. He would welcome with extreme pleasure any advance in our exact knowledge of the etiology of lateral curvature.

Dr. V. P. Gibney had never seen pressure myelitis in an uncomplicated case of rotary lateral curvature.

The chairman agreed with Dr. Hubbard that the analogy of the case under discussion to the myelitis of Pott's disease, was not very strong as according to the view advanced by Dr. Hoffa at the last meeting of the American Orthopedic Association, and generally accepted by those present; the paraplegia is due to the pressure of the inflammatory products. Personally, he had never seen a case of lateral curvature complicated by paraplegia, or symptoms of lateral sclerosis. Last fall he had a case of very moderate curvature with a very peculiar ataxic gait, but a careful examination excluded organic disease of the spinal cord, and it was decided to be a case of functional nervous disturbance, possibly produced by masturbation. It seemed strange that such a mild case as the one described in the paper, should produce such marked nervous symptoms, while the much more severe cases so often seen, have no analogous symptoms. He looked upon the cord lesion as merely a coincidence.

Dr. Berg, in closing the discussion, said that he thought the diagnosis of disseminated sclerosis very improbable, and this diagnosis had probably been made because a primary sclerosis of the cord is such a rare condition, that whenever a neurologist sees a spastic paralysis in an adult, and can find no cerebral symptoms, or symptoms of pressure upon the cord, he makes a diagnosis of disseminated sclerosis. Dr. S. Weir Mitchell had given it as his opinion, that the case was one of primary lateral sclerosis. There was no doubt as to the sclerosis and the lateral curvature, the only doubt is as to the connection between the lateral curvature and the sclerosis. Pott's paraplegia is caused by a variety of conditions, but he believed that in nearly seventy-five per cent. of the cases, the paraplegia was due to pressure resulting from flexion of the cord at the angle of the curve. He had no doubt that hundreds of cases had been seen where the lateral curvature had been considered the result of paralysis, where it was really the cause.

FEMORAL ABDUCTION, ADDUCTION AND FLEXION.

Dr. Judson presented a convenient method of observing the degrees of motion in cured and convalescing cases of hip disease. The subject was illustrated by boards on which dolls were fixed, the center of motion at the hip in each case being surrounded by a graduated arc with the degrees numbered from zero, in the natural position of supine recumbency, with a slight lordosis, up to the widest limit of normal motion. In practice, the region of motion is first to be found, and then the extent to which it may be pushed, without disturbing the natural and symmetrical position of the lumbar vertebræ and the iliac spines, is to be noted on the goniometer. The degrees of motion in flexion and laterally may thus be readily recorded.

The presence of considerable motion warrants a serious effort to reduce whatever deformity may exist. He cited two cases in which the patients being considered cured, relief had been sought for the deformity. Enough motion was found to encourage hope and good results were recorded in a few months in each case after the application of a hip splint, and later, a simple ischiatic crutch, and the return of the patient by instruction and drill to the natural rhythm of walking. The improvement was readily measured in degrees from time to time, and the deformity was almost completely reduced.

A NEW METHOD OF MAKING PLASTER CASTS OF THE THORAX IN CASES OF ROTARY LATERAL CURVATURE.

Dr. Mary Putnam Jacobi exhibited a series of models which she had prepared by an original method. It had been suggested to her by observations made with the cyrtometer upon the condition of the thorax after empyema. An outline of the thorax at the desired level is first taken with a cyrtometer, which is an instrument consisting of two soft strips of lead united by a hinge, which is placed over the vertebral column, and the lead strips closely applied to the chest walls. The lead is next placed upon a slab of marble, where it serves as a sort of shallow frame, into which the plaster of Paris cream is poured, and allowed to set. This gives practically a thin plaster cast representing a section of the thorax.

She called attention to the ease with which the diagonal diameter could be obtained, and also to the way in which these casts brought out small degrees of curvature.

Discussion on the papers of Drs. Judson and Jacobi postponed.

Academy of Medicine, Kansas City, Mo.

March 12, 1892.

Emory Lanphear, M.D., Ph.D., Kansas City, Mo., Surgeon to University Dispensary, etc., read a paper entitled

LAPAROTOMY UNDER COCAINE.

There are, many times, patients who require abdominal section yet who are in such physical condition as to almost absolutely prohibit the administration of either chloroform or ether. In such instances the surgeon may without hesitation make the operation under the effects of cocaine. The following is an instance:

Mr. W——, age fifty-two, patient of Dr. F. B. Wheeler, of Sawyer, Kansas, was admitted to the All Saint's Hospital suffering from a cancerous tumor of left side of neck, of very rapid development. Patient began to experience difficulty in swallowing about nine weeks ago, when his weight was 165 pounds. The dysphagia increased at an alarming rate and two weeks before admission to the hospital it became a matter of impossibility to swallow at all. Partial removal of the tumor was done by Drs. Wheeler and McCoy (of Pratt, Kans.), under local anæsthesia, it being deemed inadvisable even at that date to use chloroform or ether. There was very little improvement, so patient was brought to Kansas City to the hospital for further treatment.

When admitted he was *in extremis*—cadaverous, weight less than 80 pounds and at the gate of death from starvation. Upon the evening of admission the abdomen was carefully scrubbed and shaved, and a pad of moist bichloride gauze applied. At 9 A.M. on the following day, assisted by Drs. J. F. Binnie and T. B. Thrush (Dr. Sawyer standing ready to administer ether if it should be required), I made a gastrostomy under local anæsthesia from cocaine. One-half dram of a 4 per cent. solution was injected in eight places into the subcutaneous areolar tissue along the proposed line of incision. As soon as the analgesic effect was established the usual operation was made, and without any pain or even sense of discomfort on the part of patient. The only disagreeable symptom was a slight nausea when the left lobe of the liver was turned up to allow the stomach to be drawn up into the wound. The operation lasted twenty-two minutes.

How much longer the operation might have been prolonged without discomfort to the patient is a question of interest. But as a large number of the abdominal operations can be made within twenty minutes it is not so important as might at first be supposed. Besides the fact that the primary depressant effect of a general anæsthetic was avoided by the use of cocaine, there were two other points of much importance in this case, viz.: the absence of the vomiting that nearly always follows chloroform or ether and especially the *absence of shock*. There was a total absence of anything like shock, and if this be found to be a general rule an immense gain may be made in sewing up stab or even gunshot wounds of the intestine (as well as in other numerous abdominal operations), by the use of local instead of general anæsthesia.

DOMESTIC CORRESPONDENCE.

PHILADELPHIA LETTER.

Now that Spring has come, according to the almanac, we may take mental survey of the season which has just passed and sum up our impressions of its general character. The verdict from a medical standpoint is that it was bad and that nothing in its conduct became it so well as the manner of its leaving. Following the epidemic of influenza, we have had in this city an unusual number of other zymotic affections. From January 9th to March 12th, there were 949 cases of diphtheria reported to the Bureau of Health of Philadelphia, of which 315, or 33 per cent., terminated fatally. During the same period, there were 609 cases of typhoid fever, with 140 deaths. In the opinion of the Health Officer, the high percentage of deaths warrants the conclusion that physicians have not made a prompt return of all the cases as required by law. The recent outbreak of typhus in New York (owing to the landing of some Russian and Italian immigrants from an infected ship, some of whom were traced to this city), has stimulated our Health authorities to adopt every precaution to prevent its spread here. House to house visitation by a corps of inspectors in the lower parts of the city, the discovery and prompt isolation of the new arrivals from the *Massilia*, with disinfection of baggage and apartments, and other customary precautions, have thus far proved sufficient to prevent the spread of the disease, although one or two cases have since occurred and were promptly taken to the Municipal Hospital. It was reported in the daily papers, that one of the Massilia's passengers was attacked by typhus at Plymouth in this State, and a death from typhus has just been reported from another inland town, suggesting the possibility that the returns are not all in yet. The efficiency of our Health Bureau was thoroughly tested by this instance of introduction of infected persons and baggage, and the prompt and skilful manner in which the emergency was met deserves high commendation. Occurring just at a time when the profession generally is petitioning Congress to create a National Health Bureau, this outbreak of typhus and the measures taken to limit its spread or extinguish it, affords an object lesson which will not be lost upon the community, if we may judge from the attention given to it by the secular press.

The influenza epidemic is over, but the aftermath is with us in the shape of catarrhal and nervous disorders of various kinds. Prof. D. Hayes Agnew has not yet recovered from his attack of some months ago, and within the last few days has been quite seriously ill with bronchitis but is improving slowly.

The following abstract of a very interesting communication to the College of Physicians, by Dr. James Hendrie Lloyd, gives a very important idea of his really valuable paper which was entitled "Forms of Pseudo-Tabes due to Lead, Alcohol and Diphtheria:"

Although locomotor ataxia is one of the best known diseases, it happens occasionally that it is confounded with one of its counterfeits. These counterfeits are especially forms of pseudo-tabes or acute ataxia originally described in 1884 by Dejerine and since pointed out by Dreschfild, Leyden and others. Dejerine's cases occurred in alcoholic subjects, who developed incoördination, anæsthesia and abolished knee-jerks, with very slight atrophy and paresis, and without eye and bladder symptoms. The autopsies revealed inflammation of the cutaneous nerve endings, with slighter changes in the intra-muscular nerves. Leyden included such cases in one of his sub-divisions of multiple neuritis, the so-called "sensible forms." The author of the paper had observed a number of those cases of pseudo-tabes, one due to diphtheria, another to lead and others to exposure, alcohol etc. He presented sections of the spinal cord and nerves in a case of chronic lead-poisoning, in which the diagnosis of locomotor ataxia had been made by a competent clinician. The sections do not show the systemic lesion of true tabes dorsalis, but extensive multiple neuritis, with some areas of myelitis, probably secondary. The most common symptoms in cases of pseudo-tabes are disorder of sensation, as anæsthesia and paræsthesia, pain, ataxia and abolition of the knee-jerk. To those are to be added symptoms, in varying intensity, of involvement of the motor nerve, never perhaps quite absent but often requiring a careful and expert examination to detect. In some cases the history is necessary to determine a correct diagnosis. Lead, alcohol and diphtheria are the most common causes. The eye-symptoms are valuable for purposes of differentiation from true tabes. Except the ciliary paralysis in diphtheria, it is doubtful if the internal and external eye-muscles are often effected in any form of multiple neuritis—while the Argyle-Robertson pupil is certainly very common in true tabes. In lead poisoning optic neuritis is sometimes seen. Affection of the bladder and sphincter ani is not common in neuritis. Rapidity of evolution is not a sure sign of neuritis; moreover true tabes may evolve rapidly. According to Erb's later researches most cases of locomotor ataxia have history of syphilis. This suggests the possibility of pseudo-tabes being sometimes caused by syphilis, which might explain some of the published cures of syphilitic cases. Finally multiple neuritis may probably in some cases precede true tabes, and sometimes appears during the course of the latter disease. The importance of a differential diagnosis is evident. The paper was illustrated with cases seen and reported by the author.

Prof. Harrison Allen delivered a suggestive lecture in the scientific course of popular lectures at the Academy of Natural Sciences, on Feb. 19. His title was, "On the Mechanism of the Mammalian Limb." He first compared the structure of the limb in different groups of animals, and beautifully traced the relation between the structure of the mammalian limb and the medium which it encountered in locomotion and support. He showed that marked differences exist in the size and development of the limb in animals which fly, those which swim, and those which walk, run or leap upon the ground; the size steadily decreasing in proportion to the density of the medium. The changes in the skeleton accompanying these differences were next discussed, and the cause of the large pectoral muscles explained. The relation existing between the motion of the anterior extremity and the respiratory act was called to mind, demonstrating the advantage of the placing such an extremity at the side of the front of the thorax. In the terrestrial type, the motion of the limbs holds an exact relation to the centre of gravity of the body. In the most rapid motion, the front limb can retain its plane of support on the ground until the trunk has passed along so far as to bring the centre of gravity in a vertical line passing through the foot. In a subsequent attitude of support the hind limb can reach forward as far as, or even beyond, this line. The outer border of leg and of the foot, in all quadrupeds, has distinct innervation from the inner border; in the fore limb it is the ulnar nerve, and in the hind limb it is the musculo-cutaneous branch of the peroneal nerve. Contrary to the general view, the outer border of the foot strikes the ground first, instead of the foot coming down horizontally. Besides being used for locomotion and support as in quadrupeds, the limbs are also used for climbing and support by hanging, as in the sloth and the bat, for instance. Thus there is another modifying element in accordance with the use of the limb for "impact," or prehension, or "strain." In man, the lower limbs are of the former type, while the superior limb is specially adapted for strain, though it may be used indifferently for either purpose. Prof. Allen made an application of these facts of comparative anatomy to the study of fractures, especially of the upper extremity, and claimed that it is only when studied in this way that certain forms of fracture become intelligible. The text-books usually teach that in falling prone, the hand comes to the ground directly in the middle, or on the thumb side. This he finds is incorrect, and declares, from a study of specimens of fracture of the lower end of the radius by this accident, that the force of the blow was sustained by the little finger side of the hand and forearm. The result shows that the parts of a limb adapted for strain are easily disadjusted, when called upon to perform the duties of impact.

Prof. Daniel G. Brinton, M.D., is delivering a popular course of lectures at the Academy of Natural Sciences, upon Anthropology, his special subject being the "Ethnology of the United States." In his lecture upon the white race, he declared that the descendants of the original settlers, and early colonists, in those parts of the country which were out of the usual lines of travel and subsequent immigration, showed decided evidences of degeneracy, both physical and intellectual; the former being manifested by the exaggerated length of the limbs as compared with the poorly developed body, the lean or lank form, the sterility, or comparatively slight productiveness, of the women and the latter in the form principally of eccentricities of conduct, crankiness, and tendency to a form of insanity known as "systematized delusion," which is most frequently met with in small, isolated communities in New England, and also in the Southern States. Were it not for constant immigration from the Old World, Dr. Brinton believes that in America the white race would ultimately perish. The principal cause for this lies in the fact that the conditions of life, the atmosphere and climatic character of this country, and the food, are all quite different from those to which the early settlers had been accustomed, and he holds that the white race has not yet become thoroughly acclimatized in the United States. Part of the degeneracy is attributable to the abuse of alcohol and tobacco; although these are subsiding causes—and, in fact, these agents used in moderation do not appear to exert any ill effect. He noticed in passing, however, as a physiological fact, that the smoking of a cigar produces a sudden, though temporary, depression of the vital functions, as demonstrated by actual experiment; and when this is frequently repeated, the result becomes very evident in deterioration of physical structure and functional activity. The tide of immigration has been mainly confined, for nearly a century, to that portion of the United States lying between the 40th and 44th parallels of north latitude. The portions lying both to the north and south of this belt have been almost undisturbed, and in consequence afford a better opportunity of studying the effects of our climate and food for several generations. Although food is abundant, it is often badly cooked, indigestion is very common, and the physical organism suffers in consequence. He observed that nothing can be more true than the proposition that deterioration of physical structure must result in diminution of intellectual vigor and activity, although the statistics of the Provost Marshal General's office, based upon examinations of a million of enlisted men, demonstrated that the average American soldier is taller and stronger than the European. The future of the white race in this country, according to Dr. Brinton, therefore depends upon immigration of the right kind of material to strengthen the stock, until the material conditions of our life are so harmonized with the individual as to favor the formation of a permanent variety of the human family. It would be suicidal to this country to absolutely prohibit immigration; but, on the other hand, efficient means should be provided to prevent the infusion of elements already degenerate, who are outcasts from older communities. Thus far the typical American cannot be said to have appeared upon the stage, in spite of the well-known caricatures of Brother Jonathan in the European humorous papers.

In order to reduce the number of baby farms, and to keep some kind of supervision over them, a law was passed at the last session of the Legislature, requiring registration and the payment of a small fee, for which a license was issued by the local health authorities. The city papers have recently brought to public notice some violations of the law, chiefly among the colored population, where, as a rule, however, the babies seemed fairly well cared for. One curious economic and commercial or social feature has been developed by the investigation, which is not very creditable to those engaged in it. It appears that agents of small beneficial companies circulate constantly among these boarding-houses, writing policies of life insurance upon the little waifs. The custodians pay from one cent to ten cents per week on each policy, the company or individual furnishing the certificate guaranteeing to pay $8, $10 or $15 in case of death, which enables the keeper to bury the child and have a few dollars left over. Under such circumstances, if the nurse labor under the delusion that laudanum is a panacea for infantile ills, it should surprise no one, should the mortality among bottle-fed babies prove to be high. A short time ago, a baby 5 months of age, in the care of an unregistered boarding-house keeper in this city, died after having laudanum administered for cramps. The plea was made that laudanum was a "necessary medicine" for infants, and she escaped with nothing more serious than a fright and a warning. Should this doctrine gain ground, it is feared that the insurance companies will have to raise their rates or prepare for bankruptcy.

A case of leprosy in a Japanese has excited much comment lately. The patient had characteristic disfigurement of the face, and mutilation and ulceration of the hands, when he applied for admission to the Philadelphia Hospital. Upon investigation it was found that, until he became so ill that he sought treatment in the city hospital, he had been acting as cook in a down-town, third-rate hotel, kept by a Dr. Paine, who a few years ago enjoyed some involuntary notoriety in connection with the bogus diploma traffic. The doctor claimed that he had the leper under treatment, but he was held to answer for not reporting the case to the Health Bureau, and under a criminal charge for maintaining a nuisance injurious to the life and health of the community. This makes the second case of leprosy now under treatment in the Philadelphia Hospital, and a bill has just passed Council to erect an isolated building for the confinement of cases of leprosy which come under treatment. The cook's late apartments, at the Peabody Hotel, have been disinfected by the city health officer, who recommended the closure of the hotel, but this step was not taken by the authorities, although it is likely to happen as a natural consequence, since the guests have nearly all fled. It is in evidence that John Wing, the leprous patient, had been seen "preparing food, cutting and cooking meats, preparing the filling and stripping poultry, mixing the flour and working bread, cakes and pies, and doing all manner of cooking for the guests. At times, his feet and legs have been so sore that he has been compelled to sit upon the table where he mixed the flour." He had been treated by steam baths in the same boxes used for other patients. Major Veale, a health officer, suggested that the Board of Health request Congress to provide a camp, or home, where all lepers in the United States may be sent and provided for by the United States Government. This recommendation was favorably received, but final action was postponed. Here is another illustration of the possible usefulness of the prospective National Health Bureau.

In Lancaster, an interesting report was read before the local medical society, of a local epidemic of scarlatina, the infection having been carried from house to house by a dog. He was a general favorite in the neighborhood, and it was noticed that where he had visited the children subsequently were attacked by scarlatina.

At the Orthopædic Hospital, Dr. Thos. G. Morton recently treated an unusual case of ununited fracture. It occurred in a boy ten years of age, and large for his years, who was free from constitutional disease, and lived out of the city in a healthy neighborhood. The injury was occasioned by a large plasterer's box falling upon him from a wagon, which produced a fracture of the femur near the small trochanter, and quite oblique, so that the upper fragment projected forward, and the upper end of the lower fragment slipped behind it. The physician in attendance placed the limb on a double inclined plane but it was impossible to keep the fragments in contact. Three months later he was brought to the hospital with the fracture still ununited. Upon examination, the upper fragment was found nearly protruding through the skin; it was spiculated and it was surprising that it had not ulcerated through, and a little pressure would have forced it through the overlying skin. The upper end of the lower fragment was buried deeply and could not be felt. There was no union. Dr. Morton decided to cut down upon the fragments, saw off the sharp ends, and unite the broken bone by wire sutures. After making an incision six inches long over the sharp point of bone and just to outer side of the great vessels, he divided some fibrous bands and wired the ends together, and left a rubber drain in the lower angle of the wound. This was done six weeks ago; since then the boy has had no bad symptom, and now has apparently firm bony union. This is the only example of ununited fracture of the femur at such an early age, that Dr. Morton had ever seen in a patient otherwise healthy. There was no constitutional cause, no Bright's disease, no struma, or other cachexia. It well illustrates the necessity of regarding fractures of the upper part of the thigh as requiring something more scientific than routine treatment. Dr. Merton took occasion to point out the fact that non-union here was unavoidable because the fracture had not been reduced, and he said that, in such a case if he found reduction and retention impossible by ordinary means, he would feel justified in cutting down the fragments and wiring them together as a preliminary to the treatment. He is opposed to fixed dressings, and thinks that fractures should be frequently inspected, and as the rule no apparatus or dressing should be used which will not permit this precaution.

By invitation of the County Medical Society, Dr. Benj. T. Shimwell presented a new method of operating which he claims is a scientific cure for hernia. It is like the Tait operation to the extent that it requires median laparotomy, but here the resemblance ceases. Dr. Shimwell claims that hernia is caused by an abnormal length (or breadth) of mesentery; and by shortening the mesentery by taking a "tuck" or "reef" in it, he asserts that descent of the bowel is impossible. He has made a number of experimental operations upon dogs, and claims that his operation upon the mesentery does not in any way interfere with the vascular or nervous supply, or with the lymph vessels or lacteals. The operation has not yet been performed upon the living human subject.

The Trolley system of electric propulsion of street cars has not up to this time succeeded in disfiguring the streets of Philadelphia, owing to the strong public feeling against the overhead wires carrying high tension currents. A powerful corporation now has a bill before the city council, asking the privilege of taking possession of the streets for this purpose on the plea of rapid transit. A meeting of the Philadelphia County Medical Society, was held on March 12th to consider a resolution expressing the opinion of the Society on the subject of the perils to life and person from the overhead wires of this system, and the subject was warmly discussed. City Council some eight years ago, passed an ordinance forbidding the erection of posts for overhead wires and ordering all wires to be put under ground within a certain period, but thus far it has remained a dead letter. It now looks as if the present Council might undo this work and rush through this ordinance in spite of the protests of physicians and property owners along the streets where it is proposed to run the electric cars, since the railway committee of Common Council have just reported the bills favorably, with an overwhelming majority.

The new Methodist Episcopal Hospital will be opened for the reception of patients on the first of next month. The building is on the pavilion system, modelled after the Johns Hopkins Hospital of Baltimore. There are six ward buildings besides an administration building, and the institution will have ample accommodations, in twelve public and thirty private wards, for 350 beds. The ward buildings are octagonal in form, one hundred feet apart, and arranged in groups of three on the sides of a square of ground containing five acres, situated upon South Broad St., and occupying an entire square to 13th St. and from Wolfe to Ritner Sts.

The many friends of Dr. A. L. Gihon, Medical Director of the United States Navy, are pleased to see that he is likely to become Chief of the Bureau of Medicine and Surgery of the Navy Department at Washington. He is a native of this city and obtained his education here and at Princeton, N. J. Indeed he was professor of Chemistry and Toxicology in the Philadelphia College of Medicine and Surgery for some time; and, after entering the navy as Assistant Surgeon, his first assignment was to the receiving ship "Union," at the Philadelphia Navy Yard, in May, 1855. For these and other reasons, some of them personal, it is hoped that he will be advanced to the post, which will become vacant by expiration of term at the end of this month. If it should be conferred upon a Philadelphian, as we confidently expect, the news of the appointment will be received with especial gratulation in this locality.

The University of Pennsylvania has just received a munificent endowment of nearly a million of dollars for a biological and anatomical museum, from General Isaac J. Wistar. He purposes to expend $190,000 for a building, and to endow with a fund which will yield the sum of $30,000 yearly for maintenance. It will be known as the "Wistar Institute of Anatomy," in memory of Dr. Caspar J. Wistar, the uncle of the donor, who was once a professor of Anatomy in the University. It will be under the immediate direction of an independant Board of Managers, to be elected by the University Trustees. One of the Managers must be a descendant of the Wistar family and two others the President and Vice President of the Academy of Natural Sciences of this city. Plans have not yet been approved for this building but the site has been selected immediately adjoining the Biological Department.

THE CODE OF ETHICS.—It is in great form now-a-days in certain communities, with both physicians and laymen, to decry the code of ethics of the American Medical Association, which is the foundation for the codes of local medical societies. We believe that this is a mistake. We regard the code as an embodiment of the moral law, as it bears upon our duty to ourself and to our neighbor; or, to express it otherwise, of the highest and most practical business principles. We believe that it would be endorsed by any great merchant of high principle.

The public has fallen into the error of believing that the code of ethics usurps the authority of the moral law in the estimation of the physician.

We regard it simply as an expression of the most enlightened medical thought and experience; an aid to a proper solution of the very difficult problems which beset the physician; a check which tends to restrain unprincipled and aggressive practitioners, and an authority which may be referred to in cases of dispute. It is helpful to a physician to be able to consult the printed opinions of the best medical men in such cases.

Some of the precepts of the code of ethics, such as its teachings in regard to the assumption of duties for a brother practitioner and the concealment of useful discoveries, come to us with a binding force, because founded upon the law of brotherly love and the law forbidding covetousness. Other precepts, such as those concerning consultations with irregular practitioners, and undercutting of fees for the sake of competition, are simply bits of human experience—showing what is believed to be for the best interests of medical science and of the public in the long run.

It is a great comfort to belong to a profession which has, down the ages, frowned upon everything degrading or unworthy of the highest manhood and the best service to mankind, whether within or without its fold.—*Maryland Medical Journal.*

OWING to new sanitary measures in England there has been a diminution of more than thirty per cent. in the death-rate from consumption since 1861.—*Lancet.*

THE new United States Pharmacopœia will have all formulas expressed in metric terms.

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SATURDAY, MARCH 26, 1892.

INFLUENZA.

Notwithstanding the importance of this subject, and the frequency of the disease during the past winter, we have refrained from touching upon it at length in these columns, because of the uncertainty in which many careful practitioners seemed to be regarding its nature and treatment, and because of the wide divergence of the opinions recorded in current medical literature.

The disease as it appeared at first, during the winter of 1889 and 1890, was quite different from that of the following winter, and that now prevailing. Upon the whole the attacks were of shorter duration, yielded more quickly to the modern antipyretics, presented fewer complications, were followed by less depression, and by fewer severe sequelæ.

During the past two winters the milder forms of the disease have been less distinctive than before; the diagnosis has not been made with as much certainty as during the first year. The severer forms have been more common and the mortality greater. The disease seems to have been capable of seeking out the weakest point in an individual, and expending its violence there. In this way the clinical picture has been most comprehensive, and the individual peculiarities most varied. It has seemed almost as though this disease was capable of producing any clinical manifestation that other febrile disorders could present.

There is excellent ground for the diagnosis of influenza under the most varying conditions. Not only has it produced neuralgia and bronchitis, but also neuritis and pneumonia, laryngitis, pleurisy, meningitis, both of the convexity and of the base, cerebral and spinal, various disorders of the heart, of the gastro-intestinal tract, of the liver, kidneys, spleen, testicles and skin have been noticed. Indeed not a single organ or tissue of the body has escaped its ravages.

It has simulated various acute infectious fevers, and enteric and scarlet fever have been named where influenza was the disease actually at work.

There appears good ground for the belief that its influence has been felt in the course of diseases which primarily were not influenza.

While it is not clear that it has interfered with convalescence from surgical operations, medical conditions, particularly those with fever, have been affected by it.

The great mortality from typhoid fever during the past two years in the city of Chicago seems to have been an effect of the influenza epidemic rather than due to a great increase in the number of cases of typhoid.

Whatever phase the disease has taken, four conditions were almost always present. These were, suddenness of onset, pain, depression, and a febrile movement. The pain appeared nearly invariably as headache, and general muscular pains. The febrile movement was characterized by its great irregularity. In some cases the temperature was low and varied but little; in others it maintained a constant high degree, in still others, two or three irregular exacerbations and remissions occurred daily.

A tendency to sweat should also be noted as a very constant symptom, and one which appeared to be conservative.

The treatment employed has varied greatly in different hands and it is very uncertain how much good has been accomplished by therapeutic measures. For the relief of pain, antipyrine, acetanilide, phenacetin, salol and the alkaline salicylates have been largely prescribed. Frequently great success has followed their use, but the resulting depression has at times seriously interfered with their usefulness. Of these remedies phenacetin, salol, and the salicylates, particularly ammonium salicylate, have appeared to be the most useful. To the action of these drugs in promoting sweating, can be attributed no little of the good which followed their use, other than the mere relief of pain. Of the opium preparations used as anodynes, the sudorific Dover's powder seems to have been the best.

The cardiac depression that was manifested during the disease, was prolonged several weeks after the acute symptoms had subsided, and much delayed convalescence. To meet this depression, the most useful remedies have been alcohol and strychnia. Strychnia in ordinary doses produced but little effect, but in large doses, $\frac{1}{20}$ of a grain four or five times daily, its good effect was manifest. Even in these large doses, no muscular twitchings were produced. The value of this agent as a cardiac stimulant has been brought out more clearly this winter than ever before. That is, its use has been more general. Particularly has it been useful in pneumonia. In this disease or complication, when cyanosis was present, and digitalis in consequence contra-indicated, the effect of strychnia in sustaining the heart has been very clear, and very satisfactory. Under such conditions it is preferably administered hypodermically in doses of $\frac{1}{50}$ to $\frac{1}{30}$ grain, and at intervals of three or four hours, *according to the necessities of the particular case.*

External heat has been a factor of no small importance in the treatment of influenza. A very large number of the patients found a high external temperature agreeable.

Rest, physical and mental, has played an important rôle. When rigidly enforced, it can hardly be doubted but that it has been effective in preventing complications, and in hastening convalescence.

THE ANÆSTHETIC INVESTIGATION OF THE BRITISH MEDICAL ASSOCIATION IN 1892.

A highly important investigation, clinical in its main features, has been arranged to be carried on during the current year by the great British Association. Every anæsthetist, surgeon and hospital in the United Kingdom, and many others, have been supplied with formulated questions, and blank-books of record, suitable for uniformity of returns both from private and hospital practice. The General Committee has for its chairman, MR. JONATHAN HUTCHINSON, and for honorary secretary, DR. CHRISTOPHER CHILDS, of Weymouth. The work has been begun in good season, and will probably result in the richest harvest of anæsthetic experience that has hitherto been garnered. If the great British body of medical workers can be induced to move *en masse* in any such collective investigation, and to give a whole year to any allotted subject, it would seem like breaking open "a royal road" to knowledge. We give below the instructive lists of questions, framed by the General Anæsthetic Committee, in the belief that they will prove useful to some of our American hospitals, and surgeons, whose anæsthetic records are not yet systematically tabulated. Perhaps in another year or two our own national Association may undertake a parallel inquiry by committee or otherwise, for comparative purposes with the completed returns of the British investigation. Germane to this subject, we would call attention to the discussion on "the A. C. E. Mixture," by the Ohio State Medical Society in 1891. A carefully written paper by DR. J. C. REEVE, of Dayton, opened the debate, which was full of interest. Something of definiteness and uniformity, however, seems to be lacking in such discussions; and, as we believe, just for the reason that a good and comprehensive scheme of questions and responses has not been prevised, provided and used. We trust that the reproduction below of the admirable lists of queries of the British Committee may be useful far and near in this country.

"Program of Records and Information Wanted.

1.—The total number of Administrations of each anæsthetic during 1892, by yourself or under your supervision.

2.—The number of cases in which death has occurred during or shortly after anæsthetization.

3.—The number of cases in which dangerous symptoms have occurred.

4.—Special details of cases where dangerous symptoms or death have occurred.

5.—Personal experience and opinion on the points in question.

"At the end of the year 1892 the Committee will be glad of answers to the following questions:—

1.—The source of your anæsthetics.

2.—The method, manner and apparatus generally used.

3.—The approximate time usually required for producing anæsthesia sufficient for operation.

4.—The modifications and precautions adopted—
  a.—In certain cases of disease (*e.g.* emphysema, pleurisy, abdominal distension, heart disease, etc).
  b.—In certain operations (*e.g.* in region of pharynx, larynx, etc).

5.—Your opinion, formed from your own personal experience as to—

The relative safety of the various anæsthetics which you have used.

The best method and manner of administering them.

When to use one, and when the other.

The precautions to be taken with regard to the conditions and surroundings of the patient.

How to deal with any complications that may arise.

The most effective methods of restoring patients threatened with death from anæsthetics.

6.—Education in administration of anæsthetics.

How are students taught to administer anæsthetics, and how far are they compelled to gain a practical knowledge of administering them in the medical schools or hospitals with which you are connected."

The following synopsis will give an idea of the special details requested in cases of death, or dangerous symptoms—(*i.e.* such symptoms as raise the fear of immediate death, and call for the use of artificial respiration). Special details of cases in which dangerous symptoms or death have occurred.

a.—The anæsthetic.

1.—Its nature, *e.g.* ether, chloroform, etc.

2.—Purity of drug, *e.g.* from what source obtained, how long kept, whether exposed to light, etc.

(N. B.—Communication should at once be made with Professor Ramsay, University College, London, who has kindly consented to analyze a sample of any anæsthetic which has caused dangerous symptoms.)

3.—Whether other persons who have taken from same source have evinced kindred symptoms.

4.—Method of administration: amount of dilution; length of time administered.

5.—Quantity used.

b.—The patient.

1.—Age; sex; physique; first time or not of taking anæsthetic; previous drugs (*e.g.* chloral, morphia, alcohol, etc).

2.—State of health.

3—Preparation of patient: *food, purgatives, clothing, temperature of atmosphere, etc.*

4.—Phenomena of anæsthesia, *e.g.* length of time going off,

struggling, laryngeal spasm, convulsions, vomiting, etc.
Condition of pulse, respiration, pupil, reflexes.
Was anæsthesia profound?

5.—Which failed first—pulse or respiration?

c.—*The operation.*
Nature and duration. Whether antiseptic spray used; patient kept warm; posture; amount of hæmorrhage, shock.

d. *After effects.*
Faintness, exhaustion, vomiting, etc.

e. *Methods adopted in cases where death or symptoms of danger have occurred.*
(*e.g.* pulling forward of tongue, inversion of patient, artificial respiration (which method), nitrite of amyl, electricity, heat, etc.—and with what results)."

Among the members of the Committee are Sir Joseph Lister, Sir George Macleod, Pridgin Teale Snow, Macewen, Chiene, Annandale, Buxton, Durham, Croly, Butlin, Buchanan, Joseph Bell and Duncan.

NOTIFICATION OF INFECTIOUS DISEASES.

The public has so long been accustomed to the good-nature of physicians, and has so long expected from them work without compensation, that perhaps it is not surprising that they fail to recognize the financial rights of the medical man in the matter of notification of infectious diseases.

The somewhat peculiar doctrine has recently been promulgated by the lay press of Chicago, that the physicians of Illinois, being licensed by the State, are under obligations to the State, and the State has the right to demand of them certain things, as for instance the report of births and deaths, and the notification of infectious diseases, of course without compensation. If this right is inherent in the State, there is no reason why it should stop at these services. It may equally well require the services of physicians as experts in its courts, with no other compensation than a witness fee, or might compel them to attend gratuitously such indigent poor as might be certified to them by certain officers. The question at issue is not the smallness of the services, but the principle. The State has certainly no right to demand the services of physicians, any more than those of any other class of the community, without just compensation.

The trouble lies in the license. Its nature is misunderstood. It confers no favors upon the physician who holds it, it gives him no additional rights. Licensing is a measure adopted by the State to protect the community from improperly qualified practitioners. It is for the benefit of the State, not physicians. The term license is indeed a misnomer. The word registration should be used. The State prohibits the practice of medicine by physicians not registered, whatever may be their qualifications. It admits men to registration who have certain qualifications, and excludes from its register physicians who cannot comply with the requirements. It can hardly be held that such acts on the part of the State confer any privileges upon the physicians registered. If any privileges are conferred, they are certainly paid for at the time, by the fee given to the State Board of Health, and the fee given to the County Clerk.

Very few physicians would object to reporting births, deaths and infectious diseases, for the benefit of the community, but it is contended that, on principle, a fee should be paid by the authorities for the rendering of these services.

In England, where a similar system of registration prevails, a fee of 2s. 6d. is paid for each notification under the Infectious Diseases (Notification) Act of 1890.

An odd case has recently been tried, in which it has been decided that the notifying physician is entitled to the full fee, without any deduction, even that of postage. A sturdy champion of abstract rights, DR. CHISOLM, of Radcliffe, took the matter into court, and in a recent communication[1] says: "According to JUDGE JONES' decision, unless the local authorities arrange otherwise, and thus save double postage, medical men can send the notices in unstamped envelopes, and the medical officer of health is bound to receive them. . . . . Should the medical officer of health, or such officer as the notice be addressed to, refuse to receive the letter, as was done in my case, it is returned to the sender, who should receive it and pay whatever postage is charged, as it will be evidence, should the case come to trial, that he has done the work for which he claims his fee, and, in this instance, the out-of-pocket stamp value for the returned notice."

ASSAULTS UPON MEDICAL MEN.

The profession is pretty well disciplined to expect to hear of assaults on medical men by insane persons or patients. But for them to be assailed by persons in normal mental condition is fortunately a decidedly rare occurrence. An incident of this latter kind, however, is said to have transpired at Chattanooga, Tennessee, February 24. A man and his wife took part in the onslaught, which was made in the public street, with a cowhide. The physician is spoken of as holding an important position in one of the colleges of the city and as a man of prominence in his calling. The assaulted party made a vigorous defense and succeeded in breaking away from these people and in subsequently having them brought in court. The explanation of the affair, as it came out at the hearing before the justice, was that these assailants had employed the doctor to treat a sick child who had died, and the parents thought the doctor had been responsible for the child's death. It appears that while the child was yet alive, the parents consulted another practitioner who told them that their child had been wrongly treated and would probably die. When, therefore, the death took place, the parents, moved by grief and rage, undertook to avenge themselves by publicly castigating the physician of their lost child. There is something so illogical about the accounts of this assault as conveyed to the newspapers over the telegraph wires, that we are inclined to the belief that the truth is not all told in those accounts. Persons who become frenzied by losses or affliction are capable of many inconsiderate acts, but it is exceedingly rare that that frenzy is vented against the profession devoted to healing the sick. But at the same time, no physician, however conscientious or careful, can tell what day or hour he may not be made the object of some undeserved attack, malicious accusation, blackmail, or suit for damages; "for sufferance is the badge of all our race."

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[1] British Medical Journal, February 27, 1892, p. 469.

Not long ago, an extraordinary incident in the lives of two physicians of Brooklyn, called attention to some of the risks incident to medical practice. It was brought to light in a suit at law of one of these physicians. These physicians were engaged in an instrumental obstetrical case, when word was taken to the husband of the patient that the life of the latter was being endangered by the use of instruments. At the critical point of the operation the husband suddenly appeared in the doorway with a shotgun and threatened the lives of the attendants if his wife should not survive the operation. Here was a conjunction of ignorance, wrath and gunpowder ripe for murder, if the work of the physicians had not ended in the recovery of the patient. In requital for their trouble and peril, these physicians were obliged to bring suit for payment for their services. All of which gives a glimpse of the possible conditions that may surprise the practitioner almost any day, and that will be encountered, as a rule, patiently and silently. Dignity, silence and patience are the lessons inculcated in the school of medical experience.

THE INCORPORATION OF THE PAN-AMERICAN MEDICAL CONGRESS.

The circular of information published in another column shows the present status of the Pan-American Medical Congress. The general officers are announced formally, but the medical press and the entire profession have long since had the information and have applauded the selections. The publication of the "Regulations" gives to the profession the most accurate idea of the scope and purposes of the congress. It is declared in the opening paragraph that there shall be a series of these congresses, the number of years' interval having been merely left vacant. It would be a good plan to arrange for the next congress to be held either in Havana or Mexico two years hence, and thereafter let the meetings be held triennially. This would bring the American event a year in advance of the World's International Congress.

It seems that the congress has been incorporated, pursuant to the action of the National Committee at St. Louis. It was there stated that a distinguished senator had consented to champion an appropriation bill in the senate, providing the congress was made a body corporate and politic, to which an appropriation could be lawfully made. As the Washington meeting, through its attention to problems of international sanitation, will have a peculiarly popular importance, it is but proper that an appropriation should be made by the national government. The congress will need the money. Already the National Committee finds itself embarrassed for funds. The incorporation was, therefore, not only important, but imperative. This incorporation, however, does not restrict the legal existence of this congress to this country. Provisions are made for terminating the corporation as soon as the funds of the forthcoming meeting are disbursed. The congress then becomes again a mere voluntary association in the hands of the International Executive Committee. The incorporation of the congress in this country cannot, therefore, give offense to our confrères in the North and South.

THE COAGULATION OF MILK AND BLOOD.

In "Notes of Progress in Physiology" in a recent number of the *Boston Medical and Surgical Journal* Dr. Jos. W. Warren refers to the work of Arthus and Pagès[1] on the above subject. Their work has also been briefly but clearly reviewed by Prof. Howell, of Ann Arbor.[2]

The coagulation of casein is to be distinguished from its precipitation by an acid, and from its coagulation by heat in the presence of an acid. In the process of coagulation the action of the "labferment" or rennet, is said by Arthus and Pagès, to consist in preparing the casein for coagulation, rather than in the actual curdling itself. The casein is first split up by the labferment into two substances, "hemi-caséinalbumose" and "caséogène." This latter substance then unites with the salts of the alkaline earths, particularly calcium phosphate, to form the coagulated casein.

The study of milk curdling led these investigators to study the coagulation of the blood, and they found that the coagulation of the blood may be entirely prevented by the addition to it of oxalates, fluorides, or soap. The quantity of potassium oxalate necessary to prevent coagulation of blood, is 0.1%. This amount, however, is sufficient to precipitate from the blood all the calcium present as the insoluble calcium oxalate. The action of the fluorides, and of soap, is similar, both forming insoluble compounds with the calcium present. If to the "oxalated" or, better, "decalcified" blood, a soluble salt of calcium be added, coagulation will occur in from six to eight minutes, the temperature conditions being suitable. Strontium acts in the same manner as calcium, but barium and magnesium do not. Fibrin, therefore, like coagulated casein, may be regarded as an insoluble salt of casein, the "fibrinogen" and "caséogène" both acting like acids.

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[1] Archives de physiologie, XXII.

[2] Annual of the Universal Medical Sciences, 1891.

Blood and milk curdling, then, are facilitated by influences which favor the action of the ferments, and favor the supply of calcium in the state of a soluble salt, and retarded by influences acting in an opposite direction. Heat, therefore, facilitates and cold retards these processes. Precipitating the calcium retards or prevents the action, while re-dissolving it, or resupplying it favors the action.

Some of the calcium in milk exists as the soluble mono-calcium phosphate, and is in condition to unite with the caséogène whenever that substance is formed by the action of the rennet. If, however, lime water be added to the milk, some or all of the soluble mono-calcium phosphate is transformed into the insoluble di- or tri-calcium phosphate, in which state of the calcium, coagulation can not occur. The development of weak acids, however, redissolves the calcium phosphate and permits coagulation to occur.

This affords a rational explanation of the action of lime water, whose clinical usefulness in retarding the coagulation of cow's milk, and in securing a finer subdivision of the curd, has long been known.

Wright[3] has suggested the use of soluble salts of calcium, preferably the chloride, both locally and internally for the purpose of favoring coagulation of the blood, in cases of hæmorrhage, particularly from internal organs, and Bacon[4] has suggested the use of this salt in purpura hæmorrhagica.

INNOVATIONS.

An item of interest to every member of the Association may be found on page 359 of the last issue of The Journal, wherein the Section on Ophthalmology announce through their executive committee that the Cadilac Hotel has been selected as their headquarters, and for the purpose of becoming better acquainted and cultivating a feeling of good-fellowship among the members of this Section, they will dine together Wednesday, June 8, at 6 p.m. The price of dinner tickets is two dollars. And a little further on that the Section will hold two working sessions daily, from 9 a. m. to 11 a.m., and 3 p.m. to 6 p.m. In the first place the dinner is an innovation that is worthy of imitation by the other Sections. There is a good deal of warm science in the handshake and breaking of bread together. The friction engendered smooths and polishes, while the merry-thought makes the lean to wax fat and enjoy a richness of soul that makes life worth living.

The next innovation is the announcement of two sessions of Section work every day of the meeting. This is a sort of forestalling the action of the Association, on a resolution offered at the last meeting, and to be acted upon at the ensuing meeting, fixing the time of sessions of all the Sections at from 9 a.m. to 12 m. and from 2 to 6 p.m. and the time of the general sessions to begin at 12 m. This may perhaps be amended to advantage by making the afternoon session begin at 3 instead of 2 o'clock.

The two sessions per day will obviate the necessity of reading papers by title. It will also give double the time formerly allowed for the discussions. This is very important, and as an innovation will no doubt receive the unanimous support of the members of the Association. Very often a paper of no great importance is the wedge needed to open and develop a discussion of the greatest value. These discussions will be reported by stenographers and revised by the officers of the several Sections. The perfection of the autonomy of the sections will claim attention at the ensuing meeting. Echoes come to us through nearly every mail that tell of an interest and awakening of thought that bodes good for our National Association.

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The annual increase of membership is growing larger every year, indicating a centralization of thought and aggregation of work which in its cumulation and reflection to the world of science is of inestimable value. At the yearly gathering the specialist meets with those who are delving in the same lines with himself. While the general practitioner whose field of observation covers the whole domain of medicine does not fail to bring with him, not only straws, but sheaves and stacks of grain for winnowing, garnering and the feeding of the multitude.

The annual meetings of the American Medical Association are great gatherings, and those who can attend them cannot afford to be absent.

EDITORIAL NOTES.

Too Many Pleas of Insanity.—In the New York Legislature a bill has been placed upon the calendar, and will probably pass, to stop the abuses and miscarriage of justice in the acquittal of criminals on the ground of insanity. If this bill becomes a law, no person acquitted of a capital offense on the plea of insanity shall be given his freedom until a jury shall have released him from the asylum to which he is confined. New York, in common with some others of our States, has an antiquated criminal legislation, devised before the insanity plea became popular, so that it is not difficult for a murderer even to get an asylum sentence, and after a while get a release on a *habeas corpus* writ, and again wage war on society. This undesirable procedure can be hindered if the freedom of the alleged insane criminal shall be placed in the jurisdiction of jury trial; the jury will be made to stand between the defenseless public and the possible return of maniacal violence.

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[3] Brit. Med. Jour., Dec. 9, 1891.

[4] Chicago Med. Recorder, Mch., 1892.

ST. BARNABAS HOSPITAL OF MINNEAPOLIS.—The above named hospital is reported to have won an important decision, in the Supreme Court of Minnesota, whereby property worth $400,000 will be handed over to it. St. Luke's Hospital of New York City was an alternative legatee in this case in the event that the Minneapolis institution could not conform to certain requirements. The Court held that these requirements had been met satisfactorily, and the munificent bequest should go to the Western institution.

ERROR IN DIAGNOSIS.—The Vienna correspondent of the *American Practitioner* narrates a remarkable error in diagnosis, which is useful, not because it shows how "a great clinician may be tripped up, but because it should make the little fellows more cautious." The writer states that his authority for the statement is Dr. Kundrath, chief of the pathological institute at the University. There came one day to Professor Nothnagel's clinic a patient offering a dubious chain of symptoms. He had a very large area of dulness over the upper abdominal and lower thoracic regions of both sides. The man also gave as part of his history the fact of having had a dog to which he had been greatly attached. The diagnosis was plain to Nothnagel as one of echinococcus, and a lecture of considerable length was given to the class on that topic, preliminary to the patient's being handed over to Billroth's clinic for operation. An operation, laparotomy, was performed, but the liver was found to be normal, or nearly so; and the same was true of the spleen. The trouble was seen to be thoracic and not abdominal. The wound was closed. An autopsy was possible a few days later, when the real disease was revealed to be pericarditis with an unusual amount of effusion.

MEDICAL DIRECTOR GIHON, of the U. S. Navy, who is a prominent member and officer of the American Medical Association, and also of the American Public Health Association, is next in line of promotion, and will, no doubt, soon be appointed Chief of the Bureau of Medicine and Surgery of the Navy Department at Washington.

Dr. Gihon is one of the few United States government medical officers who have done themselves, their government and profession honor and credit by their work that is extra and outside of their official duties.

Young medical men, after passing an examination of rigorous severity, which indicates their attainments and capability for the highest type of professional labor, have, we regret to say, in too many instances, settled down to a monotonous, hum-drum professional life, without a seeming ambition to let their fellows in their own profession know of their existence.

Dr. Gihon, we all know, is not of that type, but one who keeps up a living, active identity with the members of his profession; their interests are always actively his. Dr. Gihon's promotion will therefore be gratefully received as an honor most worthily bestowed.

A NEW PLAN OF EXTENSION IN LOCOMOTOR ATAXIA. The *Press and Circular* states that one of the French periodicals, name not given, has presented to the consideration of the profession a modification of suspension for the relief of certain spinal affections. The new treatment, based upon the same *rationale* as the older plan, consists in seizing the two lower limbs and flexing these extended members upon the abdomen until the knees touch the forehead. The author, an Italian physician, Dr. Pietro Bonuzzi by name, first places the patient flat on his back with a small cushion under his head. The advantages claimed for the method are that it requires no apparatus, and that it ensures a maximum mechanical and therapeutical effect. According to some cadaveric experiments, he believes that the amount of stretching of the spinal cord thus obtained may be as great as three times that obtainable by suspension. It is further stated that the treatment has been tried several times in Vienna, and favorable results have been reported.

SIXTY YEARS IN PRACTICE.—Dr. Edwin N. Colt, of Brooklyn, was given a banquet and a gold-headed cane on the sixtieth memorial year of his settlement in that city. Being a man held in great esteem in the community, which he has seen grow up from the conditions of a village to those of a tenement district, there were representatives of every calling at the feast given to his honor. The mayor of the city participated, and members of the clergy and the press responded to toasts which made the ministers "doctors of the heart," and journalists "doctors of the circulation." Dr. Colt was born in Hinsdale, Massachusetts, in 1811; graduated at the old Berkshire Medical College, no longer extant, on the year of his coming of age, and within the same year established himself in Brooklyn.

A CORRECTION.

The title of Dr. Manley's paper, as given in the preliminary programme of the Section of Neurology and Medical Jurisprudence, should read: "The Relation of Physical Violence to Hernial Protrusions Through the Abdominal Walls, and its Medico-Legal Aspect."

THE PAN-AMERICAN MEDICAL CONGRESS.

The Committee on Permanent Organization met at St. Louis, October 14, 15 and 16, 1891, and adopted a series of General Regulations for the permanent organization of the Pan-American Medical Congress, and a series of special regulations for the government of the first meeting, and recommended that the Incorporators adopt both series of regulations as the organic law of the Congress.

Pursuant to such Regulations the following general officers were elected, viz.:

William Pepper, M.D., L.L.D., Philadelphia, Pa., President; Abraham M. Owen, A.M., M.D., Evansville, Indiana, Treasurer; Charles A. L. Reed, M.D., Cincinnati, Ohio, Secretary General.

International Executive Committee: Argentine, Dr. Pedro Lagleyze; Bolivia. Emilio de Tomassi; Brazil, Dr. Carlos Costa; British North America, Dr. James F. W. Ross; British West Indies, Dr. James A. De Wolf; Chili, Dr. Moises Amaral; Colombia, P. M. Ibañez; Costa Rica, Dr. D. Nuñez; Ecuador, Dr. Ricardo Cucalon; Gautemala, Dr. José Monteris; Haiti, Dr. D. Lamothe; Hawaii, ———; Spanish Honduras, Dr. George Bernhardt; Mexico, Dr. Tomas Noriéga; Nicaragua, Dr. Juan I. Urtecho; Paraguay, ———; Peru, Dr. José Cassamira Ulloa; Salvador, Dr. David J. Guzman; Santo Domingo, ———; Spanish West Indies, Dr. Juan Santos Fernandez; United States, Dr. A. Vander Veer; Uruguay, Dr. Jacinto De Leon; Venezuela, Dr. Elias Roderiguez; Danish, Dutch and French West Indies, ———.

The Auxiliary Committee nominated by the various members of the Committee on Permanent Organization each for his own State, and already commissioned by the Chairman, was confirmed.

The election of officers of sections was begun, but time would not permit of the completion of the list, which was referred to a special committee with power to act. It has been deemed inexpedient to publish the list until it is completed, which can hardly be accomplished before the meeting of the Committee on Permanent Organization at Detroit in June; but the organization of particular sections will be announced through the medical press as rapidly as officers are elected by the special committee.

In accordance with the wish of the Committee on Permanent Organization as expressed in Special Regulation No. 4, Drs. I. N. Love, A. B. Richardson, L. S. McMurtry, R. B. Hall, T. V. Fitzpatrick and Charles A. L. Reed met in Cincinnati and signed the legal form of application for Articles of Incorporation of the Pan-American Medical Congress, which Articles of Incorporation were duly issued by the Secretary of the State of Ohio, under date of March 15, A. D. 1892.

At a meeting of the Incorporators held March 16, 1892, the following Regulations, general and special, recommended by the Committee on Permanent Organization were formally adopted as the organic law of the Pan-American Medical Congress in accordance with the Laws of Ohio, and all elections had by the Committee on Permanent Organization, in accordance with such regulations were confirmed and made a part of the laws of the Congress:

GENERAL REGULATIONS.

Title.

1. This organization shall be known as the Pan-American Medical Congress, and shall meet once in —— years.

Membership.

2. Members of the Congress shall consist of such members of the medical profession of the Western Hemisphere, including the West Indies and Hawaii, as shall comply with the special regulations regarding registration, or who shall render service to the Congress in the capacity of Foreign Officers.

Officers.

3. The Executive Officers of the Congress shall be residents of the country in which the Congress shall be held, and shall consist of one President, such Vice-Presidents as may be determined by special regulations, one Treasurer, one Secretary-General, and one Presiding Officer and necessary Secretaries for each section, all of whom shall be elected by the Committee on Organization, and there shall be such Foreign Vice-Presidents, Secretaries and Auxiliary Committees as are hereinafter designated.

The Committee on Organization.

4. The Committee on Organization shall be appointed by the representative medical association of the country in which the Congress shall meet. This Committee shall select all domestic officers of the Congress, and shall at its discretion confirm all nominations by members of the International Executive Committee, and in the event that any member of the International Executive Committee shall fail to nominate by the time specified by special regulation, the Committee on Organization shall elect officers for the country thus delinquent. It may appoint Vice-Presidents and Auxiliary Committeemen in foreign countries independently of nominations by the members of the International Executive Committee. It shall appoint Auxiliary Committees, arrange for the meeting, and frame special regulations for the session of Congress for which it was appointed. It shall make a report of its transactions to the opening session of the Congress.

The International Executive Committee.

5. There shall be an International Executive Committee which shall be appointed by the first Committee on Organization, and which shall consist of one member for each constituent country. This Committee shall hold permanent tenure of office except that when a member shall fail to be present at a meeting of the Congress, his office shall be declared vacant and the vacancy be filled by election held by the registered members from the country from which he was accredited. In the event of no representation whatever from the country in question, the members of the International Executive Committee present shall determine what disposition shall be made of the office.

It shall be the duty of each member of the International Executive Committee to nominate from the medical profession of his country, one Vice-President for the Congress and one Secretary for each Section of the Congress, and to forward the same to the Chairman of the Committee on Organization; except that in any country in which the Congress shall meet, it shall be the duty of the member of the International Executive Committee for that country to request his representative national medical association to appoint a Committee on Organization, which Committee on Organization shall discharge the duties designated in Regulation IV. Members of the International Executive Committee shall also nominate such Auxiliary Committees, and shall furnish such information as the Committee on Organization may request.

6. The Committee on Organization may at its discretion cause the Congress to be incorporated, which incorporation shall hold only until the final disbursement of funds for the session held in that particular country. In the event of such incorporation such officers shall be elected and in such manner as may be required by law.

7. The following shall be considered as the constituent countries of the Pan-American Medical Congress:

Argentine Republic, Bolivia, Brazil, British North America, British West Indies (including B. Honduras), Chili, Honduras (Sp.), Mexico, Nicaragua, Paraguay, Peru, Salvador, Colombia, Costa Rica, Ecuador, Guatemala, Haiti, Hawaiin Islands, Santo Domingo, Spanish West Indies, United States, Uraguay, Venezuela, Danish, Dutch and French West Indies.

8. The Sections of the Congress shall be as follows:

(1) General Medicine, (2) General Surgery, (3) Military Medicine and Surgery, (4) Obstetrics, (5) Gynecology and Abdominal Surgery, (6) Therapeutics, (7) Anatomy, (8) Physiology, (9) Diseases of Children, (10) Pathology, (11) Ophthalmology, (12) Laryngology and Rhinology, (13) Otology, (14) Dermatology and Syphilography, (15) General Hygiene and Demography, (16) Marine Hygiene and Quarantine, (17) Orthopædics, (18) Diseases of the Mind and Nervous System, (19) Oral and Dental Surgery, (20) Medical Pedagogics, (21) Medical Jurisprudence.

Languages.

9. The languages of the Congress shall be Spanish, French, Portuguese and English.

Auxiliary Committees.

10. The Auxiliary Committee shall consist of one mem-

ber for each medical society on one for each considerable centre of population in each of the constituent countries of the Congress. Nominations for the Foreign Auxiliary Committee shall be made to the Chairman of the Committee on Organization by the members of the International Executive Committee, each for his own county, except that in the country in which the Congress is to be held nominations shall be made by the Committee on organization. Appointments on the Auxiliary Committee shall hold only for the meeting for which they were made.

Members of the Auxiliary Committee shall be the official representatives of the Congress in their respective localities. It shall also be their duty:

(1) To transmit to the profession of their respective districts all information relative to the Congress forwarded to them for that purpose by the General Officers.

(2) To coöperate with the Officers of Sections in securing desirable contributions to the proceedings of the Congress.

(3) To furnish to the General Officers such information as they may request for the purpose of promoting the interests of the Congress.

(4) To cause such publicity to be given to the development of the organization as will elicit the interest of the profession and secure attendance upon the meeting, and they shall discharge such other duties as will promote the welfare of the Congress.

SPECIAL REGULATIONS OF THE FIRST CONGRESS.

Time and Place of Meeting.

1. The First Pan-American Medical Congress shall be held in the City of Washington, D. C., September 5, 6, 7, 8, A. D. 1893.

Registration.

2. The Registration fee shall be $10.00 for members residing in the United States, but no fee shall be charged to foreign members. Each registered member shall receive a card of membership and be furnished a set of the transactions.

Abstracts, Papers and Discussions.

3. Contributors are required to forward abstracts of their papers, not to exceed six hundred words each, to be in the hands of the Secretary-General not later than the 10th of July, 1893. These abstracts shall be translated into English, French, Spanish and Portuguese, and shall be published in advance of the meeting for the convenience of the Congress, and no paper shall be placed upon the program which has not been thus presented by abstract. Papers and discussion will be printed in the language in which they may be presented. All papers read in the Sections shall be surrendered to the Secretaries of the Sections; all addresses read in the General Session shall be surrendered to the Secretary-General as soon as read; and all discussions shall be at once reduced to writing by the participants.

Incorporation.

4. The Chairman of the Committee on Organization shall cause the Congress to be incorporated under the laws of Ohio, and fifteen trustees shall be elected in accordance therewith, who by the by-laws and through the Executive Committee shall supervise all receipts and disbursements by the Treasurer in accordance with the laws of Ohio. The President, Secretary-General, Treasurer, the member of the International Executive Commitee for the United States, and Chairmen of Sections shall be *ex-officio* members of the Board of Trustees.

Foreign Nominations.

5. All nominations by the International Executive Committee must be in the hands of the Chairman of the Committee on Organization by June 1, 1892, and in default thereof the Committee on Organization shall elect officers for countries thus delinquent.

The Organization of Sections.

6. The officers of each Section shall consist of: —— Honorary Chairmen, who shall be residents of the constituent countries of the Congress; one Executive Chairman, who shall organize the work of the Section, direct its deliberations, and deliver an inaugural address at its opening session; one English-speaking Secretary and one Spanish-speaking Secretary, residents of the United States, who shall cooperate with the Executive Chairman in conducting the correspondence of the Section; and there shall be one Secretary for each Section, resident in each additional constituent country of the Congress.

Domestic Auxiliary Committee.

7. The Auxiliary Committee for the United States shall be elected by the Committee on Organization, and shall consist of one member for each local medical society, or, in the absence of medical organization, then one in each considerable centre of population, which Auxiliary Committee shall coöperate with the Committee on Organization and with the General Officers in promoting the welfare of the Congress. Nominations for the Auxiliary Committee shall be made by members of the Committee on Organization, each for his own State, except that in the failure of any member to make such nomination by January 1, 1892, or in the inadequacy of the same, the Chairman of the Committee on Organization shall supply the deficiency.

Executive Committee.

8. The Board of Trustees shall designate seven members, including the President, Treasurer, Secretary-General, and member of the International Executive Committee for the United States, who shall comprise an Executive Committee which shall transact all business of the Congress *ad interim* in accordance with By-laws adopted by the Board of Trustees.

Amendments.

9. Amendments to these regulations can be made only by the International Executive Committee on a majority vote, ten members constituting a quorum, at any meeting of the Congress.

Pursuant to the Laws of Ohio and the Regulations adopted as above, and in accordance with nominations by the Committee on Permanent Organization, the Incorporators elected fifteen Trustees as follows:

Dr. W. T. Briggs, Tenn.; Dr. Geo. F. Shrady, N. Y.; Dr. P. O. Hooper, Ark.; Dr. S. S. Adams, D. C.; Dr. H. O. Marcy, Mass.; Dr. J. F. Kennedy, Iowa; Dr. H. D. Holton, Vt.; Dr. L. S. McMurtry, Ky.; Dr. N. S. Davis, Ills.; Dr. Levi Cooper Lane, Calif.; Dr. I. N. Love, Mo.; Dr. Hunter McGuire, Va.; Dr. J. C. Culbertson, Ill.; Dr. A. Walter Suiter, N. Y.; Dr. C. H. Mastin, Ala.

Drs. L. S. McMurty (Ky.), I. N. Love (Mo.), and W. W. Potter (N. Y.), were designated to act as members of the Executive Committee.

The organization of the Congress is complete in British North America, the British West Indies, the Spanish West Indies, Guatemala, Nicaragua, United States of Colombia, Brazil, Uruguay, Venezuela and the Argentine. It is confidently expected that the nominations from the remaining countries will be in by June.

It is expected to announce the completed organization of the Congress, its sections and auxiliary committees, domestic and foreign, by July 1, 1892.

On behalf of the Committee on Permanent Organization,

CHARLES A. L. REED, Chairman.

J. W. CARHART, Secretary.

CHARITIES AND CORRECTION.—Until the present century, the policy of Europe in dealing with crime and pauperism, was the best possible if the object had been to propagate and increase them both. The States of the New World necessarily copied many of the methods of the Old. Unfortunately, along with much that was true and wise, they copied and perpetuated many old blunders. But with the advance of modern thought, especially with the enormous widening of the sphere of scientific knowledge, have come new and better ways of dealing with the defective, the criminal and the pauper.

To spread abroad and make popular the better ways in charity and reform, is the object of the National Conference of Charities and Correction, which meets annually in one or other of our great cities, and will hold its nineteenth annual session in Denver, Col., next June. It combines the best philanthropy of all creeds and all shades of political opinion, upon the broad platform of humanity. Its programme for the year has just been issued, and is an interesting paper, its topics covering many of the social problems of the time.

The membership of this Conference is unique. It has no salaried officers, and no selfish benefit to offer to any one, so its doors are open to all the world; whosoever will may come in, on a footing of the most perfect equality. The fact that you are interested in its work, makes you a member, and entitles you to a seat and a voice in its discussions. Any one desiring further particulars as to reduced railroad fare, hotel accommodations, etc., may address Alexander Johnson, Secretary, Indianapolis, Ind., who will send circulars and answer inquiries.

BOOK REVIEWS.

Ptomaines, Leucomaines and Bacterial Proteids; or the Chemical Factors in the Causation of Disease. By Victor C. Vaughan, Ph.D., M.D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, and Frederick G. Novy, Sc.D., M.D., Assistant Professor of Hygiene and Physiological Chemistry in the University of Michigan. Second Edition. Philadelphia: Lea Brothers & Co. 1891.

This work has developed enormously since its first edition, as indeed it has had to do to keep pace with its subject. It has been necessary to change the very title of the book. When the first edition was issued ptomaines and leucomaines, alkaloidal bodies, were the only substances of bacterial or cell origin, known to be concerned in the production of disease processes. Since then, however, the very important class of bacterial proteids has been discovered, and the authors wisely generalize the title of their book, by not only including these substances, but also provide for further expansion in the term "chemical factors."

A large number of works on bacteriology are before the profession, but this is the only work which presents the chemical aspect of the question. It can hardly be doubted but that, in most instances, microörganisms produce their effects through the agency of the chemical substances elaborated in their growth. The importance, then, of the study of this link between the microörganisms and the disease, should be apparent. To supply this link is the object of this book, and it has fulfilled its purpose, so far as the present development of the subject will permit.

The current literature has been searched most faithfully for material, and the compilation of the important work which has been done upon the matters treated in the book, has been thorough.

The theoretical portions of the work are pleasing and satisfactory. The chapter entitled "General Considerations of the Relations of Bacterial Poisons to Infectious Diseases," is worthy the most careful study.

The Principles of Bacteriology: A Practical Manual for Students and Physicians. By A. C. Abbott, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. Illustrated. Philadelphia: Lea Brothers & Co. 1892.

This book deals with the methods of the bacteriological laboratory, and its principal use will be for students actually engaged in this line of work. The book is a good one of its kind.

A Manual of Hypodermatic Medication. By Roberts Bartholow, A.M., M.D., LL.D. Fifth Edition. Philadelphia: J. B. Lippincott Co. 1891.

This last edition of Bartholow's famous work has assumed imposing proportions, having become a book of over 500 pages. And as is customary with the works of this author, no useless material encumbers its pages.

The book opens with an accurate and instructive description of the technique of the method, and follows with a full description of probably all drugs that can be used subcutaneously. It must not be supposed that it is limited to the dosage and preparation of the materials to be used, but each remedy is very fully discussed, and its therapy clearly expressed. The section upon the "Digitalis Group" is a masterly effort. It includes a description of the physiological effects, and the therapy of digitalis, sparteine, convallaria, strophanthin, adonidin, adonin and blattic acid, as well as a critical inquiry as to the particular uses of each, and their relative merits in different conditions.

The Complete Medical Pocket Formulary and Physician's Vade Mecum. Collated by J. C. Wilson, A.M., M.D. Philadelphia: J. B. Lippincott Co. 1892.

This work is a collection of 2,500 prescriptions arranged under an alphabetical list of diseases. No indication is given of the particular conditions under which the prescriptions printed have been used by their authors. Under the heading of rickets is a prescription calling for tannic acid, gr. ½–gr. j, to be given two or three times a day. The only direction which appears to guide its use is the expression *In rickets*. Presumably it is to be used in the diarrhœa of rickets, but the man who has no better way of handling the diarrhœa of rickets, than by striking madly at it with small doses of tannic acid, had better not attempt to treat rickets.

Under the head of mammary inflammation there appears one of Rush's prescriptions for calomel and jalap, 10 grs. each. It is marked *Brisk purge for incipient mastitis*.

We are informed in the preface that such works are valuable for ready reference, and for suggestions. This is possibly true at times, but it is just such half work as this which makes careless practitioners. There are already too many conditions which favor slipshod work, to permit another such factor to slip in.

The book is called a pocket formulary, but gentlemen purchasing it will find a large pocket necessary for its accommodation. An outside overcoat pocket will hold it, but any other pocket in the ordinary clothing of a man would prove insufficient, unless given up solely to this book.

We cannot recommend this book.

A Dictionary of Treatment; or Therapeutic Index, Including Medical and Surgical Therapeutics. By William Whitla, M.D., Professor of Materia Medica and Therapeutics in the Queen's College, Belfast, etc. Revised and adapted to the Pharmacopœia of the United States. Philadelphia: Lea Brothers & Co. 1892.

The matter appears under the names of various diseases and symptoms, arranged alphabetically, and makes a volume of 900 pages. The author in his preface rather regrets the condensation which has been necessary, but in no instance has he sacrificed clearness to brevity. The matter is all the more valuable from having been drawn largely from the author's own experience, and his discussions of the various conditions arising in the course of diseases, and of suitable treatment for each, shows him to be a man of wide practical knowledge, and stamps his words with the ring of authority. His presentation of the treatment of valvular lesions of the heart, is alone well worth the price of the book. None of the single books on the practice of medicine now before the profession, handle the subject of treatment so thoroughly or so satisfactorily as this work. The book will be found by the careful practitioner to be not merely a source of suggestion, but of reliable and trustworthy information.

Growing Fever.—Barbillion has written a long article on the so-called growing fever of children. His conclusions are that the fever of growth no more exists than does a fever of obesity or of senility. The symptoms which have been grouped under this head are due to a great variety of causes, such as are seen in ephemeral fever, stomach troubles, acute osteomyelitis and other pathological lesions.—*Rev. Mensuelle des Maladies de l'enfance*, January, 1892.

SELECTIONS.

Quills as Drainage Tubes.—Quills as drainage tubes have been suggested by Dr. Beach, of Massachusetts, and they have been used by him for the past two years for this purpose. The goose quills are those which are used for the finer grades of camel's hair brushes. The quills are taken without cutting off the dermal end, and perforated at intervals with an ordinary round leather punch. A delicate and smooth-pointed tube is thus provided, presenting the maximum lumen and minimum thickness of wall. The tube is made from a natural appendage, and is absolutely unirritating. It can readily be cut with scissors, and is not fragile like glass. It does not undergo any of the irritating chemical changes which are frequently seen where rubber tubes have remained for any length of time. The tubes are preserved in a sublimate or carbolic solution, and are easily sterilized.—*Gaillard's Medical Journal.*

The Headaches of Childhood.—Growing pains are more of a myth in regard to origin than in point of discomfort. The latter is very real. Headaches of the period of growth, so-called, Dr. Jules Simon thinks very often due to causes other than those associated with organic development. This matter is treated at length in the *Journal de Médecine et de Chirurgie*, November 10, 1891. Headache in pale, puffy, sleepy-eyed children, coming on after meals, is a digestive headache, due to dyspepsia that may be brought into existence by bolting the food, eating too frequently or at hours unwisely chosen, or too heartily at supper-time, or too near the hour for going to bed. Such headaches are benefited by reducing the evening meal to the minimum, sometimes suppressing it altogether, by warm drinks, by abdominal massage, and electricity applied to the abdomen. There is one kind of headache that is purely nervous, the headache of environment, so to speak, due to educational methods that result in a sort of perpetual exhaustion. This headache is worse toward evening. It may also be an expression of one of three distinct nervous disorders in this incipient state—of hysteria, epilepsy and chorea. The epileptic headache Dr. Simon considers easy of recognition, for the pain comes on periodically and lasts an hour or two; often the character undergoes temporary change, and the patient is for the time incapacitated. Bromide acts well in such cases, also belladonna. These failing, the polybromides are usually successful. Hygiene is the mainstay. It must ever be borne in mind that children suffering from nervous headache are very sensitive to cold, and that they should be clad accordingly.

The choreic headache is difficult to diagnosticate at first, especially when the movements are but slightly accentuated. Antipyrin, which Dr. Simon calls the remedy for chorea, given in large doses, will cure this form of cephalalgia. The rheumatic or uric acid headache in children is usually an expression of gouty or rheumatic hereditary tendencies. Two interesting cases are cited—one a boy who appeared to have meningitis, yet recovered in a surprisingly short time under treatment, of which an important element was bromide of potassium. The other, a girl 15 years of age, suffered from persistent headache with congestive crises. Bromide was tried three months without avail. Small doses of salicylate of soda, followed by colchicum and valerian, induced rapid improvement in a remarkably short space of time. The rheumatic or uric acid headache, in its clinical aspects, presents certain special characteristics. It is often accompanied by supra-orbital or post-cervical neuralgia, by joint troubles, and shifting symptoms that find expression in different parts of the organism. The urine is concentrated, cloudy, and contains urates in abnormal quantity. There is often profuse sweating without apparent cause, and attacks of colliquative diarrhœa. The foregoing are diagnostic points. Pain is first to be overcome. But the true remedies are those that relieve congestion, as the bromides, salicylate of soda and colchicum. Diet plays an important part. Our French authors consider children subject to rheumatic headaches often sluggish in mind and body, and indifferent to exercise. This they must be forced to undertake. Stimulation in the way of dry rubbings, and rubbings with warm liniments, are advised.

Even very little children do not escape malarial poisoning that gives rise to violent headaches. Quinine and hydrotherapy will cure this condition, that is intermittent, accompanied by neuralgia, sweating, and general irritability. Other headaches due to poisoning are those that follow the protracted use of drugs, such as belladonna, opium, iodide of potassium and digitalis.—*Medical Record.*

The Relation of Chorea to Rheumatism and Heart Disease.—The relation of chorea to rheumatism and heart disease has always been a subject on which very divergent views have been entertained. The great frequency with which endocarditis is found in fatal chorea makes the theory originally advanced by Kirkes, that the disease is caused by emboli blocking the arterioles of the motor centres, at first sight a very plausible one. That this is the explanation of the mode of origin of a few cases of chorea is probable, but it certainly cannot be the cause of the great majority of cases, for we find that chorea generally sets in without any previous endocardial inflammation.

A recent writer (P. Meyer in the *Berliner Klin. Wochen.*) gives an account of 121 cases of chorea treated in Henoch's klinik during the past five years. In 9 per cent. of the 121 cases there was a history of rheumatic symptoms, and in 10 per cent. heart disease without any rheumatic symptoms was made out. In 2 per cent. of the cases both heart disease and rheumatism were present. From these statistics Meyer concludes that chorea is merely a symptom which can be induced by the most varied causes. This, however, is only a partial representation of this subject. Any hypothesis which does not take into consideration the functional predisposition to chorea cannot be accepted as adequate to explain its nature. This functional predisposition is necessarily always present. It essentially consists in the want of a due stability in certain motor areas. It is the element in chorea that is inherited, and without which the disease cannot be brought about. It is true that it is possible to have an acquired instability of certain cortical areas, as the result of many diverse injurious influences.

Given this instability of the motor cortex, the causes that may induce choreic movements are very various. In one case it may be simple emotion, in another any internal or external poisonous agent. In the latter class we include the poison of rheumatism. This poison, then, induces not only this disease, but the chorea and endocarditis. There are no grounds for entertaining the opinion sometimes expressed that chorea causes endocarditis. When the three diseases appear in the one case, it is more than probable that they are induced by some poison, either the rheumatic or allied poison, and in such cases the proper treatment is the treatment of the rheumatic state.—*Gaillard's Medical Journal.*

Retro-pharyngeal Abscess in Infancy, and its Treatment.—Bilton Pollard has collected four cases (three in his own practice) of retro-pharyngeal abscesses in children varying in age from seven months to two years and one month, all ending in recovery. In each case the abscess had no relation to spinal caries, and was evidently local in character. The author is of the opinion that the tonsils are rarely, if ever, the seat of the disease in children of this age. As soon as the abscess is diagnosed it should be opened, and two methods are practicable: either internal or external. The first is the more tempting; but on account of the fact that it cannot be properly drained, and the opening may close and allow the pus to again accumulate, the external excision, as is recommended by Chiene in chronic retro-pharyngeal abscess depending on spinal caries, is preferably used.

The operation was done as follows: An incision in the posterior triangle about one inch long and about one inch below the mastoid process was made along the posterior border of the sterno-cleido-mastoid muscle. When the fascia covering the muscles is reached, a cautious dissection with blunt instruments is made behind the deep vessels of the neck, until a finger placed in the wound almost met another placed in the pharynx. A director guided by the finger was then passed into the abscess, and the opening enlarged by passing a pair of dressing forceps into it, and forcibly separating the blades. A drainage tube is inserted, and care is to be taken that it does not slip out, as it did in one of the author's cases, and the pus again accumulate.—*The Lancet*, February 13, 1892.

Epidemic of Contagious Porrigo in Infants.—Jonathan Hutchinson gives an interesting account of an epidemic of contagious porrigo (impetigo contagiosa) occurring in infants born in the maternity ward of St. Pancreas Workhouse, England. The starting of the epidemic seems to have been due to vaccination, but afterward no connection could be traced with the vaccine virus. The eruption was bullous, non-symmetrical, easily curable, of a local character, and with but little constitutional disturbance. It was decided that the wards should be closed for a month, and every possible means of disinfection should be employed. This was done; but on again opening the wards, after several children had been born and discharged healthy, the eruption again broke out. Several of the mothers contracted the disease, and it appeared on them as an impetiginoid eczema.—*Archives of Surgery*, January, 1892.

Camphoric Acid for the Night-Sweats of Pulmonary Tuberculosis.—Probably there is nothing so unpleasant or aggravating in tuberculous patients as the profuse sweating that occurs either in the morning or during the entire night. The depression following it does not seem to be due to the sweating itself, but rather to the effects of a gradual increase in the quantity of carbonic acid gas in the blood, incident to the difficult interchange of gases in consequence of the pulmonary affection. It is well known that in normal respiration the blood does not contain so continuously a high percentage of carbonic acid gas as will cause a less sensitive condition of the centers governing respiration. But in pulmonary tuberculosis, when the energy used in the daily exertions, from excessive coughing or other physical causes, more than exceeds the supply of energy and nutrition that can be furnished by the body, the respiratory centers are greatly depressed, and are not stimulated so quickly by a percentage of carbonic acid gas that normally would affect those centers. The centers presiding over the functions of the sweat glands, not being affected by the physical causes, respond to the increased stimulation, and pour forth their secretion abundantly. The proper therapeutic mode of combating this functional perversion would seem to be to use such a drug as shall stimulate the respiratory centers, and thereby cause the elimination from the blood of more carbonic acid gas, and in this indirect manner act as an anhidrotic.

Camphoric acid seems to effect this object with less derangement and more satisfactory and lasting results than any other drug. This remedy is best given in doses of twenty grains from four to six hours before the period of sweating is expected. The best method of administration is dry on the tongue, and washed down with a little water. The taste of the drug is not unpleasant; neither does it produce the gastric irritation so frequently experienced with many medicinal agents used under like conditions.—James Wood, M.D., in *Medical News*.

Nitrate of Silver in Blennorrhœa of the Conjunctiva.—J. H. Thompson (*The Southern Clinic*, January, 1892) believes that no antiseptic applicable to the conjunctiva equals nitrate of silver. He admits the value of bichloride of mercury under ordinary circumstances, but thinks that its application in a strength equal to that in which nitrate of silver is efficient is detrimental. He points out the depth to which gonococci enter into the tissues, and consequently the value of nitrate of silver in the treatment of the diseases which are under their influence, because this salt, in addition to its germicidal value, is a superficial caustic and an astringent. He uses a strong solution in preference to the mitigated stick.

Soap in the Treatment of Affections of the Lid Margins.—Wolffberg (abstract *Centralbl. f. Prakt. Augenheilk.*, December, 1891, p. 384) advocates, from the hygienic standpoint, the use of a neutral fluid soap as a means of washing the borders of the lids. The ciliary margins are thus freed from the milder types of the affections to which they are subject, and are protected against severe sequelæ.

NECROLOGY.

Lewis Potter Bush, A.M., M.D., LL.D.

For many years he filled a high and useful station as physician, Christian, philanthropist, scientist, and as an active worker in the various medical and scientific bodies in which he has been a member, and over which he has presided. Prominent as a leader of the medical profession of the State, he endeared himself to the entire medical faculty of Delaware. He ranked high as a sanitarian, and his indefatigable labors in the State Board of Health, and as a contributor to the literature of this science, bear ample witness. For many years he was a member of the American Medical Association, and always took an important part in the deliberations of that National body. As a member of the Medical Society of the State of Delaware, he rarely missed the annual meetings, sometimes occupying the chair as presiding officer, and at all times foremost in the conduct of its affairs. He was also President, during a term, of the American Academy of Medicine, and in full sympathy with its efforts to raise the standard of medical education in America. He was thoroughly identified with educational work, and President of the Delaware College.

Though a veteran in his profession, Dr. Bush was broad and liberal in his views, always courteous to his peers, and a friend and father to his juniors. In early days he served as a member of the staff of the Philadelphia Hospital, contemporaneously with the eminent Professor Stillé, and these two great men held each other in mutual admiration from that time. His hospital life gave him great advantage in physical diagnosis, and his trained ear was rarely at fault. This, coupled with his great learning and experience, and his strict professional integrity, made his services to the younger members of the profession invaluable. In fact, his many virtues and attainments, his talents, his learning and professional skill, caused his long life to be a singularly useful one, and he has come to his grave in full age, "like as a shock of corn cometh in his season."

Dr. Bush possessed in an eminent degree all the qualities of mind and heart appropriate to the accomplished and successful physician, patriotic citizen and Christian gentleman. His principal merit, however, was a moral one. "The charm that was constantly diffused over his countenance and manners was the effect of the habitual benevolence of his temper. The silence of pain, and the eye of hope, which took place in his patients the moment he sat down by their bedside, were produced not more by their conviction of his skill, than by their unlimited confidence in his sympathy and integrity. The affectionate attachment and esteem of his friends was founded in the belief that his deeds of kindness were not simply the effect of spontaneous feeling, but the heartfelt sense of moral obligation." And "he shall return no more to his house, neither shall his place know him any more." But in the records of illustrious men who have adorned the medical profession of the city and State, and occupied a high place in the religious and social life of the community, Dr. Lewis P. Bush will always maintain a distinguished rank.

Dr. George Montgomery died in New York City, March 18, 1892. He was until a few weeks ago a prominent practitioner of Newburyport, Mass. He was a native of New Hampshire, born in Stratford in 1834, and was graduated from the Medical School of Bowdoin College in 1854. During the late war he was surgeon with the New Hampshire volunteers. He was a member of the Medical Society of Massachusetts since 1874.

MISCELLANY.

The American Climatological Association will hold its next meeting at Richfield Springs, New York, June 23. President, Dr. Willis E. Ford, Utica, N. Y.; Dr. J. B. Walker, Secretary, 1617 Green street, Phila.

American Medical Association, Section of Medicine.—Comparatively few papers have yet been promised for this Section. The officers of the Section are nevertheless confident of a meeting more than ordinary in its scientific value. Those desiring to contribute papers should at once notify the Secretary, James M. French, M.D., 190 Baymiller St., Cincinnati, O.

A PRETENDER.

[translation.]

Berlin, February 11, 1892.

In some of the American lay journals, especially in Cincinnati, the following misuse is made of the name of Virchow. In these papers is an announcement that the great German physician, Dr. Karl Virchow Schick, just arrived from Germany, is prepared to give consultations. He claims to have made important discoveries in the germ treatment of chronic diseases, and that his prescription is used by 806 physicians of Europe. In the official register no physician of this name is to be found in Berlin or Germany.

The intention of this man is evidently to mislead the great public by means of the name of Virchow. I would request you, honored colleague, to have this letter published in order to protect the public against imposition.

Yours truly, Dr. S. Guttman,
Editor *Deutsche Med. Wochenschrift.*

Medical Society of the State of Pennsylvania.—The Forty-second Annual Meeting will be held in Harrisburg, on Tuesday, Wednesday, Thursday and Friday, May 17, 18, 19 and 20, 1892, commencing on Tuesday, May 17, at 9 a.m.

Appointments for 1892.—1. Address on Practice of Medicine, Dr. J. H. Musser, Philadelphia; 2. Address on Surgery, Dr. T. D. Davis, Pittsburg; 3. Address on Obstetrics, Dr. H. G. McCormick, Williamsport; 4. Address on Mental Disorders, Dr. J. W. Phillips, Clifton; 5. Address on Otology, Dr. G. R. Rohrer, Lancaster; 6. Address on Hygiene, Dr. A. A. Woods, Erie.

To be Acted Upon.—Report of Committee on Pharmacy, Dr. H. A. Hare, Philadelphia, Chairman; Report of Committee on Contagious Ophthalmia, Dr. J. A. Lippincott, Pittsburg, Chairman; Report of Committee on Rush Monument Fund, Dr. W. Murray Weidman, Reading, Chairman.

Chairman of Committee of Arrangements, Dr. William T. Bishop, 211 Pine street, Harrisburg, to whom all applications to read papers at this session should be sent, not later than April 1.

Secretaries of County Medical Societies are earnestly requested to forward at once complete lists of their officers and members, giving the post-office address of each.

Every delegate, before admission, shall present a certificate of delegation, signed by the president or secretary of his county society.

Every permanent member (not a delegate), before admission, shall present a certificate of good standing in his county society.—*Extract from Constitution.*

Wm. B. Atkinson, Permanent Secretary.

The following beautiful tribute to one of the Masters in our Art is from the pen of Dr. Wm. Porter, and taken from the *Clinique*.

SIR MORELL MACKENZIE.

The master rests. After the day of toil
An urgent message came to him, and he
Well used to sudden calls, in quiet haste,
With kind *good-night* went out and all was still.
And now his work is done; to him no more
Will come the suffering ones and those who need
The helping hand and words of goodly cheer.
His last response completed all his work.
O, strong and gentle heart, ours is the loss
Who knew thee well—and knowing loved thee more.
Ours is the loss and thine the great reward.
We crown thee victor, O thou kingly dead.

Snake-bite.—Dr. Kaufmann, who recently took the Orfilia prize of the Paris Academy of Medicine for a memoir on serpent venoms, says that chromic acid is the best remedy for snake-poisoning. It is employed in one per cent. solution by intra-muscular injection, the needle being plunged into the tissues at the point where the bite was received. In this strength, he says, the acid exerts no caustic action in the tissues, while it destroys thoroughly the toxic properties of the venom.

Medical Advertising, both direct and indirect, is growing in favor with a certain class of doctors, and their more quiet brethren do not know how to stop them.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, *from* March 12, 1892, to March 18, 1892.

First Lieut. William N. Suter, Asst. Surgeon U. S. A., granted leave of absence for four months, from March 22, 1892.

Lieut.Col. Francis L. Town, Surgeon U. S. A., while on duty at Hdqrs. Dept. of California, in charge of the office of the Medical Director, will, in addition to said duty, examine recruits at the rendezvous in San Francisco, Cal.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending March 19, 1892.

P. A. Surgeon E. H. Marsteller, ordered to duty at the Naval Academy.

P. A. Surgeon W. F. Arnold, from the "Vermont," and to the "Richmond."

Asst. Surgeon C. H. T. Lowndes, from the "Richmond," and to the "Vermont."

Surgeon D. Dickinson, from the Navy Yard, Mare Island, and two months' leave.

Surgeon A. M. Moore, from Naval Hospital, Mare Island, and to Navy Yard, Mare Island.

Surgeon E. Norfleet, from the U. S. S. "Monocacy," and granted three months' sick leave.

Asst. Surgeon G. T. Smith, from the U. S. S. "Mohican," and to the coast survey Str. "Hassler."

Asst. Surgeon L. L. Young, from the "Independence," and to the "Mohican."

Medical Director W. K. Scofield, granted one year's leave of absence, with permission to leave the United States.

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ORIGINAL ARTICLES.

A DEMONSTRATION OF SOME OF THE CAUSES OF ROTARY LATERAL CURVATURE OF THE SPINE.

Clinical Lecture delivered at the Jefferson Medical College Hospital.

BY H. AUGUSTUS WILSON, M.D.,
Clinical Lecturer on Orthopædic Surgery, Professor of General and Orthopædic Surgery in the Philadelphia Polyclinic, Clinical Professor of Orthopædic Surgery in the Woman's Medical College.

In connection with the anomalous muscular development of the case that Professor Brinton brought before the class last week, I desire to introduce the subject of rotary lateral curvature of the spine, or scoliosis, as introductory to the study of individual cases. You will remember the man had an enormous development of the muscles all over the body, produced, probably, by following some form of the Swedish movements, for his method of bringing into prominence any desired muscle was through the opposing force of other muscles. There is one thing I would ask you to observe, in explanation of the principle upon which this form of gymnastic exercise depends. If I raise my arm simply, I would not do much towards developing my biceps muscle, for it thus simply raises the weight of the forearm. If, however, I will the triceps muscle at the same time, to resist the upward movement produced by the biceps, I find that it is quite another thing, and that the biceps must necessarily begin to develop increased power in proportion to the resistance caused by the triceps, and the triceps develops as the increase in the strength of the biceps. This is a principle I wish you to bear in mind while I am speaking of lateral curvature. The presence of correlation of muscular force prevents a normal body from being deformed, and I believe its reëstablishment will correct deformity, if applied rationally, and prior to serious bone deformity.

I propose devoting this hour to an introduction, as it were, to the subject; that is, to calling your attention to the essential points of the disease in general, rather than dwelling upon the points presented by a single case. I will bring a model before you, and study with you the production of lateral curvature, and then, at another clinic, I will bring some cases before you to illustrate the various conditions present. I desire at each of my lectures to give to you a kernel of thought, some one thing so condensed as to carry conviction with it, and impress it upon your memories. The essence of to-day's lecture I have written on the board as my text: "Rotary lateral curvature of the spine may be produced by any *persistent* alteration of the relation normally existing between the axes of the hips and shoulders." Now, as a result of the statement made here, I may call your attention to the existence of deformities which produce deformity—or, putting it in another way a little more perplexing, to deformity-producing deformities. Take, as an illustration, flat foot on one side, which will shorten the stature of one side of the body, making one leg shorter than the other, and producing an obliquity of the hips, thus, altering the relationship of the pelvis to the shoulder, curvature follows. If I have a shortened leg, from any cause, on one side, the planes of the pelvis and shoulders diverge and converge in proportion to the asymmetry, and deformity is produced. These deformity-producing deformities are all important as factors in the production of rotary lateral curvature. I shall not occupy much of your time this morning by calling attention to the normal characteristics of the spine, presuming a thorough knowledge on your part of normal structures. The spinal column is made up of a number of small bones or vertebræ, so arranged that they tilt on one another at the will of the person, by the exertion of muscular force in the desired direction. What holds up this movable spinal column is the action of muscles which, by contracting, force each vertebra against its fellow, making the column rigid. This acts exactly like the rigging holding a mast of a ship. The mast is made up of one piece, it is true, but this piece is composed of a mass of fibres which are held up in position by guy-ropes which firmly draw down upon both sides. If the sail gets off to one side, the drag upon the mast is so heavy that there is a curvature of the latter, and the guy-ropes upon that side become relaxed, while those upon the other are firmly contracted. So in the human body; as I bend my body to one side, the muscles of the convex side are elongated and on the stretch, and those on the concave side shortened by muscular contraction. Now here comes the point. If by muscular action alone a person can be put into a deformed position, if there is persistency in maintaining the deformed position, eventually there is produced a deformity of the bones also. It is this deformity of the bones which is essentially the condition in lateral curvature as a result of some previously existing cause. This deformity of the bones I believe is of a secondary character; the change in the muscle was primary. By means of a model I purpose showing you the formation of lateral curvature of the spine in the normal spinal column, so that you may understand, when you see cases, why certain lesions exist.

The Side-Saddle.—I will now call your attention to a factor in the production of lateral curvature which has not received the recognition which it deserves. I realize that I am open to criticism in my statement, but I believe that the side-saddle used by horsewomen is an important factor in the production of lateral curvature. But you say that horseback riding is said to be the best form of exercise. That is true, if you refer to it as taken by yourselves, but not when taken as woman, from the dictates of custom, is compelled to take it. On this young man, sitting in the position of a woman when occupying the side-saddle, I place this rod in the axis of the shoulders, and another in the axis of the pelvis. You will see that the two are in different planes. A rotation of the vertebræ always accompanies this twisting of the body. Certain muscles are placed at a disadvantage by the position which the patient assumes. However, before this position will produce a deformity, there must be a condition of preceding feebleness, and a persistent or frequent resort to the deforming position.

In recognition of the possibility of the side-saddle being injurious, there are in use side-saddles made with the horns on both sides, so that the rider can from time to time dismount and change sides. There are other side-saddles made with horns that are changeable, to facilitate the accomplishment of the same object and not have the unsightly horns on the side not in use so conspicuous. While this is a step in the right direction in at least the recognition of the liability to produce deformity, it does not go far enough.

I will not permit patients with rotary lateral curvature to use the side-saddle at all, and being loath to deprive some of them of the exhilaration of this form of outdoor exercise, I have had recourse to the use of the bifurcated skirt. The principal objection to its use lies in its making the wearer more conspicuous, and it is therefore difficult to have adopted in or near the city.

The method of riding astraddle, or in the man's saddle, is so entirely different that much of the previous instruction is useless, and riding must be learned all over. Patients who have adopted this method tell me that it is far more easily learned, that they feel safer, and have the consciousness of the horse's movements being freer, from the absence of the necessarily tight girths of the side-saddle.

There has recently been introduced in this city a riding-school where instruction is given to girls and women wearing the bifurcated skirt, and I hope the time is not far distant when a rider with a bifurcated skirt will attract no more attention than a woman on a bicycle.

Faulty Positions in School.—I wish to make another demonstration. Here is a very common fault in the position of children at school. If a leg of a table is in the way, they throw their feet around to one side, but have the shoulders parallel to the table, and as a result there follows a rotation of the spine from the change in the planes of the shoulders and pelvis. If this change is persistent, especially if the child is debilitated, a rotary lateral curvature will be apt to develop.

Improper Positions in Bed.—It is stated that one of the most prolific causes of lateral curvature is the position of the body in bed, and I have seen illustrations corroborating the statement. I will put our patient to bed to illustrate this fact, in the position that I have had the privilege of seeing, and in one case I saw upon the bed seven pillows, while the young lady was lying in such a position that lateral curving of the spine could not help resulting. Should the patient occupy this position for seven or eight hours each night, a deformity will result which will become difficult to treat, because of the faulty habit that must be overcome, as well as to reëstablish the muscular functions which are normally engaged in preventing rotary lateral curvature.

One Short Leg.—Inequality in the length of the legs is another prolific cause in the production of lateral curvature. When I repeat the statement that has been made, that four-fifths of the human beings have an inequality in the length of their limbs, you can perceive what a field there is here for the production of this deformity from this factor alone. I will shorten this boy's limb by 1½ inch by means of a block of wood placed under one foot. A lateral curvature of the spine follows, as I readily demonstrate to you by means of the rod. The shoulders are straight, but one side of the pelvis is tilted, and as a result, the spinal column deviates from the straight position. Likewise, sitting with one buttock raised. This is not an uncommon thing to see in girls, who are fond of sitting on one foot on the chair. The change in the position of the shoulders and hips will naturally produce a deviation in the position of the spinal column.

There are other causes of lateral curvature. Thus in patients who have lost a leg, and in those who have an exaggerated development of the muscles on one side, due, for instance, to fencing, producing excessive weight on that side, a curvature often follows. I have seen illustrations of this also in the blacksmith, where the right arm has been used to excess. The same thing will take place if an arm is lost, and the excessive weight of a tumor on one side, or the presence of an enlarged liver, will, it is said, likewise act as the distorting factor. Artificial limbs should be so made that the weight, as well as the length, will be equal to that of the other side, so as to prevent the production of this curving. At the base of all these cases, however, there must be a constitutional defect or feebleness. This feebleness, while it is clearly apparent in defective muscular development, is only in part in these structures, for the osseous system also is at fault, permitting changes in these structures to take place.

Many writers advocate the theory of the primary lesion being in the bones, and while there is plenty of room for doubt in this matter, there is no doubt whatever that the proper development of the muscular system will prevent and correct very decided deformity.

The character of the deformity of the vertebræ, clearly shown in pathological specimens, is that not alone of compression, but of decided torsion. The anterior aspect of the body of a vertebra shows a wedge-shaped condition, due to unequal compression of one side, and this wedge shape increases in intensity, as it were, as each vertebra approaches the point of greatest curvature. The spinous processes are bent and twisted, in proportion to the deviation of the bodies from the normal position, and a factor in this twisting may be found in the strong ligaments that attempt to maintain the correct position. So altered is the appearance of the vertebræ that have been submitted to the forces that produced the deformity, that there is clearly indicated a preëxisting softened condition of the bones, to have permitted such changes without fracture.

When we remember the period at which this curvature is especially prone to manifest itself, that between the ages of 8 and 16 years, we can readily understand that, in many patients, the osseous system is not then prepared to resist the excessive strain that is placed upon it.

If one's muscle can be greatly over-developed, why cannot we train our lateral curvature patients to develop those muscles which shall correct the deformity? There comes a time, however, when the deformity of the bone becomes so pronounced and fixed that the correcting of the deformity is out of the question. Now, as our model bends over, you see the vertebræ more or less prominent, but all in a straight line. If now, in a patient, instead of this, you see the line imperfect, with the position of the ribs distorted, you may make up your mind that the deformity is permanent. If the patient now lies face downward, you see the spinal column in a straight position, and as I place a rod on the shoulder blades, the points are at an equal height. This will not be observed in cases of lateral curvature. If we could get a transverse section of the chest, the outline would be depressed posteriorly on one side, and unduly prominent on the other, elongated laterally.

In rotary lateral curvature of the spine there is a deformity of the thorax, produced by the rotation and resulting deflection of the ribs, which puts the diameters of the chest in very different positions. The ribs are thrown out posteriorly, protruding on one side, while there is a bulging of the opposite side anteriorly. A deformed hip will produce a deformed spine, and this a deformed thorax. Remember, then, that orthopædic surgery is for the *prevention*, as well as for the correction, of deformities.

The reason that a deforming position may be indulged in by many persons for a more or less prolonged time without being followed by rotary lateral curvature, is that this position is not *persistently maintained*, and because the muscles which naturally prevent and correct deformities are all in proper relationship and active.

To produce rotary lateral curvature of the spine, therefore, there must be an enfeebled muscular system, as well as a persistent maintenance of an altered or abnormal relationship between the axes of the hips and shoulders.

I do not feel prepared to condemn corsets or tight lacing because more than three-fourths of all cases of rotary lateral curvature occur in girls, for the reason that there are far more girls without than with scoliosis, and they are all addicted to corsets and more or less improper clothing. But I do most emphatically say that in cases of this deformity, where it is desired that the muscular action should be developed, no clothing should be used which restricts in the slightest degree the full natural play of muscles.

The mother or the patient will at first complain most bitterly of the impossibility of holding the back up, and refer to the backache—all of which is evidence against, rather than in favor of, the use of the corset. The relief from these disagreeable features may be expected just as soon as the muscles which were made to hold up the spine are acting as they undoubtedly were intended.

For precisely the same reason, let me deprecate the use of any kind of brace or support in the early stages of this deformity. If you are, as I wish you to be, convinced that muscular action is the principal factor in the prevention, and as well in the correction, of the beginning curvature, permit nothing whatever to compromise the efficient and judicious development. There are scattering cases where a modified plan of procedure is required, but I am to-day alluding to the average or typical cases, believing that if you fully appreciate the principles, you will readily apply them to the needs of individual cases.

I deprecate the rest plan of treatment, either prone or supine, because I believe that the girl's system does not require increased feebleness, but increased strength, to resist the progress of the deformity. The deformity has been produced by constitutional debility, and the best method of overcoming that is by judicious exercise, made applicable to the special needs of the patient's condition.

The application of mechano-therapy, or applied gymnastics, to the treatment of rotary lateral curvature, is too large a subject for me to do more than broach in the few remaining minutes. Let me say. that your prescription of exercise should be given with the same care and judgment that you would prescribe any other powerful remedial agent, remembering that harm and serious damage may be done by improper use, and great benefit derived from a skilful application.

How are we going to go about judging the extent of the lateral curvature? The method adopted in the study of a case here is as follows: The seventh cervical vertebra is a very important point to bear in mind in determining the deformity, because it is a decided landmark, easily recognized. We mark this with a blue pencil, and from this run a line down to the middle point of the sacrum, touching each point over the spinous processes with the pencil. If the column is straight, every prominence of the vertebræ will be in the line of the string. If I draw a line at right angles to this, at the point of the apices of the scapulæ, they should be on a level. Again, taking the acromion processes, and holding a string across the back, at right angles to the line of spinous processes, I find in normal cases that they are upon a level. Another way of corroborating the condition is to suspend plumb lines of equal length from each shoulder, and note how near the weights come to the floor on each side. A strip of sheet lead may be used for the purpose of learning the curve of the spine. Starting at the seventh cervical vertebra, and bending it with the fingers to make it correspond to the curve of the spinous processes, and tracing down the back, I am able to get the curvature of the back. Laying this on a sheet of white paper, I mark the curve by means of a pencil. This is sufficiently accurate for all points of clinical recording. I might go farther, and mark on the line the point of each vertebra, but this is usually unnecessary. I can mark this curve on paper with different colors, and thus record the condition of the curves at the time of each of the subsequent measurings. There is a still more satisfactory way of recording the condition of the spine, and that is by means of photography, for it clearly and accurately shows the depression of the scapulæ, the prominence of the vertebræ and the depression of the ribs, and every detail of what I term "expression" of the deformity.

It is my experience that photography is invaluable in the study and accurate record of cases of deformity, and especially that form whereby the flash light is available. It is applicable to the privacy of one's office, and thereby avoids the exposure of the patient to other eyes than those of her medical adviser.

I feel that I have to-day given you only an insight into the subject of rotary lateral curvature; but what I have said will be of service throughout the winter, in the study of the condition and treatment of individual cases.

1611 Spruce Street.

SALIENT FEATURES OF THE OPERATION FOR CLEFT PALATE.

A Clinical Lecture Delivered at the Chicago Medical College, Medical Department of the Northwestern University, January 26, 1882.

BY W. E. CASSELBERRY, M.D.,
Professor of Materia Medica and Therapeutics and of Laryngology and Rhinology.

The little patient now being anæsthetized suffers from a congenital cleft of the palate which extends through the uvula and velum and some distance into the hard palate—about through the horizontal plate of the palate bone, but not involving the superior maxilla.

On inspection, the parts appear as if there were no soft palate, the side flaps being retracted by muscular tension, leaving a wide, inverted, V-shaped opening, through which is visible the posterior and superior walls of the naso-pharynx, with their covering of adenoid glandular tissue. In severer cases, the fissure may extend through the entire roof of the mouth, and may be conjoined with hare-lip. The operation is known as staphylorophy when the cleft involves the soft palate only, or extends but little into the hard palate, and osteoplasty when the palate process of the superior maxilla is so deficient as to necessitate the Fergusson procedure of drilling off edges of bone to bring together in the center.

True cleft-palate is always congenital. The so-called acquired cases differ therefrom in presenting unequal, ragged or incomplete cleft, such as would be produced by the destructive ulcerations of syphilis. Heredity seems to be an important factor in congenital cases, as it is prone to repeat itself in families, often skipping one or more generations, to reappear, or diverging into collateral branches. The symptoms consist of inability to swallow perfectly and to talk properly, a disability, of course, which varies according to the extent of the cleft. On account of the difficulty in phonation, the operation for closure of the cleft should always, when possible, be performed early, before the child has learned to talk in an imperfect manner; otherwise, even though the cleft be closed later, much difficulty is experienced in teaching correct speech. It should, therefore, be performed between the age of one-and-a-half and three years. The age of this patient is two-and-one-half years, and she has just commenced small talk.

It is not our purpose to speak of this operation in detail. It is one which has interested the greatest surgeons of the day, and which will be found described at length in all text-books of surgery. But our experience has taught us that there are certain points essential to obtain a good result—that is, perfect primary union of the two sides; and it is these salient features of the operation that we will emphasize as we proceed.

It is important that the general condition of the patient be good; that the season of the year should be one that will not likely derange the health of the patient—that is, preferably, not during the heated term of summer. The bowels should be opened freely the day before the operation by the administration of castor oil the night preceding this. Special care should be taken to avoid vomiting caused by the anæsthetic by forbidding any breakfast on the morning of the operation. You can readily understand that the whole success of this long and tedious operation will depend upon securing primary union, and that this preliminary treatment is calculated to have the health of the child favorable to secure such union.

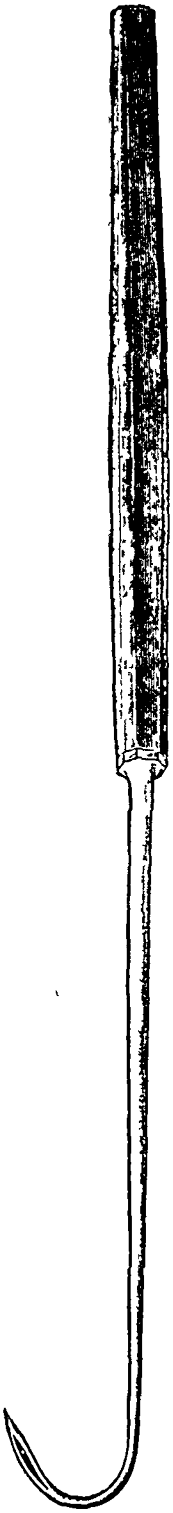

Fig. 1.—Author's Modified Staphylorophy Needle.

For anæsthesia in operations about the mouth, chloroform is often preferred to ether, because its administration can be more interrupted; but children with cleft palate are apt to be generally feeble, so we emphatically consider ether the safer anæsthetic for prolonged use. But as in this case, one can commence with chloroform, because of its greater rapidity and pleasantness of action, and continue, as soon as unconsciousness is secured, *with ether*.

As with most other operations in the mouth and throat, the patient should be placed in Rose's position; that is, with the head pendant from the edge of the table, and the shoulders elevated by a small hard pillow, so that blood will gravitate into the naso-pharynx, and not into the wind-pipe. In this position, at times when hæmorrhage is freest, the patient can be rolled upon the abdomen, and the blood allowed to flow from the mouth and the nose.

In our opinion, there is only one gag that is suitable, and that is Mussey's modification of the Whitehead gag. It has a tongue-depressor attached, and it is absolutely necessary that by this means the tongue be held depressed at the same time that the mouth is gagged open. The tongue-depressor of the Whitehead gag is attached by a hinge and ratchet-joint, which easily gets out of order, and detracts from the value of the mechanism. In the Mussey gag the tongue-depressor is a part of the same piece, but by force it can be bent to a different angle if required.

Many and complicated needles have been devised for the purpose, among which we may mention Prince's needle as ingenious, but rather complicated. All that is necessary is a curved needle mounted in a handle, as illustrated in Fig. 1. This needle is often kept in the shops, but is never accurately and correctly made. The curve should be much more acute than is usually supplied, and the eye of the needle as near as possible to its point. These may seem like very small details, but the matter of the needle is one of the most important features for successful operation, inasmuch as it is sufficiently difficult to place the sutures with a perfect needle, and with a faulty needle it may be impossible.

Sponges, which have been carefully disinfected and mounted in long, firm sponge-holders, must be in readiness.

We come now, our patient being thoroughly under the influence of the anæsthetic, to the first and absolutely necessary step, the division of certain muscles. We believe this should be the first step of the operation, and not, as generally advocated, the last step, for the reason that firm and accurate coaptation of the edges can be made only after the perfect relaxation of the muscles thereby produced. Having introduced the gag, you will notice the wide aperture in the roof of the mouth, and that it is seemingly impossible to draw together the two sides of the palate. This is by reason of the constant contraction of the palatal muscles. If one were to draw the two sides together forcibly by means of stitches under the partial relaxation produced by the anæsthetic, the stitches would only be ripped out at the first effort of the child at crying or coughing or swallowing. Perfect relaxation of the velum only can assure to us complete primary union of the parts. The muscles to be divided on each side are the tensor palati, the levator palati, the palato glossus, and one of the palato pharyngei. The last named muscles constitute, as you know, the anterior and posterior pillar of the fauces respectively. The tensor palati arises on each side at the base of the internal pterygoid process, and, descending, its tendon winds around the hamular process, which can be felt by the tongue just to the inner side of the upper third molar tooth, and then spreads through the body of the velum. The levator palati has its fibres distributed lying just posterior to the tensor. A puncture, therefore, through the velum, commencing at the point of the hamular process, and following its curve about three millimetres upwards, will sever the tendon of the tensor. Then the knife, with its cutting edge directed upward, should have its handle depressed, withdrawn, reintroduced (in the same opening), the cutting edge directed downward, and handle elevated, cutting in this manner the posterior surface of the velum more widely than the anterior surface, so severing as many fibres as possible of the levator. Having done this, you will notice how much more easily the two sides can be approximated.

We now raise the velum on each side and snip with scissors the anterior pillar, and on one side the posterior pillar. It is claimed by Lawson Tait that division of the posterior pillars is liable to be followed by atrophy of the palate, presumably from division of the blood supply. This result, however, we would not consider possible if only one posterior pillar is divided, because the arterial supply would then be left intact on one side, and it would supply collateral circulation, if necessary.

You have noted that the division of these muscles, especially the puncture to the inner side of the hamular process, has been followed by considerable hæmorrhage, due to the division of a small artery at this point. It is recommended by some authors that this puncture be made by the galvano-cautery to prevent the hæmorrhage. We have used this measure, but do not consider it satisfactory, as it is followed by considerable soreness and inflammation, which endangers the primary union. The hæmorrhage is not likely to be dangerously profuse, but the galvano-cautery point-electrode may be at hand to still an excessive hæmorrhage by introduction subsequently into the aperture.

We will next pare the edges. Here again I would emphasize the need for thorough work. It has been suggested that the edges may be split instead of pared, with the idea of saving tissue. To this we would say that after division of the muscles there is abundance of tissue, and that splitting of the edges does not result in the same satisfactory raw surface. In paring the edges the uvula on one side may be grasped with a pair of forceps, the part drawn tense, a very sharp, curved bistoury introduced at the border of the hard palate, and the edge pared off in one piece from the top to the bottom. Usually, however, it is necessary to pare the uvula separately with scissors. One should not hesitate to pare off sufficient tissue to obtain perfectly raw edges.

In this case we must also provide for closing the small part of the hard palate which is likewise cleft. For this we must loosen tissue to slide to the median line by making lateral incisions through the mucous membrane and periosteum, and by incision around and behind the anterior end of the cleft, extending to the bone both on the buccal and nasal surface. Then, by means of a pereosteal elevator, we raise the periosteum from the bone, from the lateral incisions to the edges of the cleft, which part of the edge must also be well detached from the underlying bone and fascia and properly freshened wherever it is to join the one of the opposite side. (Fig. 2.) These two flaps can now be brought together in the median line. The mucous membrane will subsequently be reformed over the denuded bone left by sliding the flaps away from the lateral incisions.

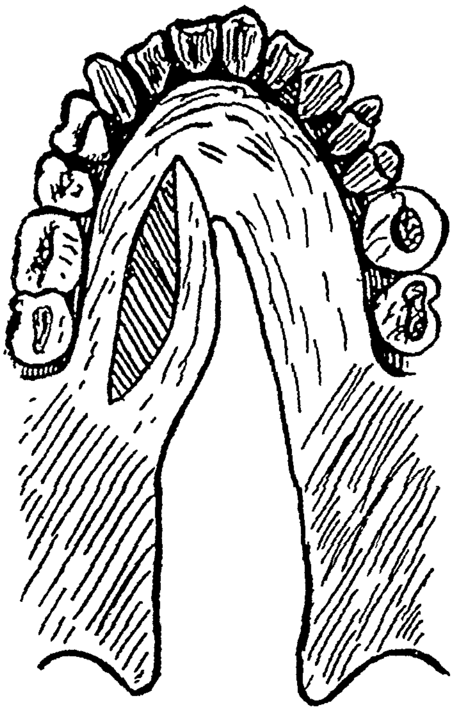

Fig. 2.—Flap prepared on one side only.

This has been known as the Warner-Langenbeck operation, since these operators laid special stress on the advantages of denuding the bones of periosteum as well as mucous membrane. If this is carefully done, the posterior palatine artery, which descends through the posterior palatine foramen, and runs anteriorly in its groove close to the alveolar border, can be lifted from its bed and made a part of the flap. Irregularities of the bone-surface will, however, necessitate some breaks in the periosteal layer as elevated. The method may be used for closing quite extensive clefts of the hard palate, provided the fissure is not very wide, in which case one cannot obtain sufficient width of flap from the narrowed borders.

For the latter class of cases Ferguson advocated the separation, by boring and chiseling of sufficient of the bony edges to bring together in the centre to close the cleft. This procedure appears unnecessarily formidable, apart from the fact that with very wide cleft—the cases with which the ordinary flap operation is inadequate, the bony edges are likewise too scanty to afford a reasonable prospect of success.

For such wide clefts the soft flap method recently proposed by Davies-Colley[1] of Guy's Hospital commends itself. Figures 3 and 4 will convey his idea.

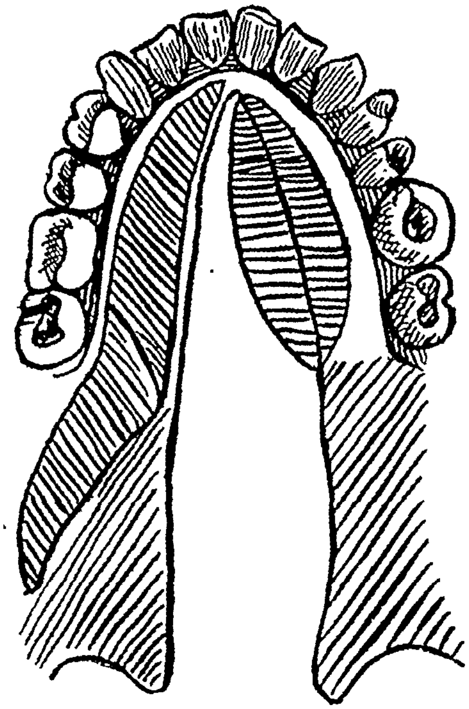

Fig. 3.—*After Davies-Colley.*

Next the introduction of the sutures, by far the most difficult part of the operation. We prefer silk sutures and consider them much superior to silver wire and shot, as they are softer in the mouth and seemingly do not produce the same amount of irritation and annoyance to the child. Two colors, white and black, should be used, as all the stitches should be passed before tying, and if these colors alternate confusion of the ends need not occur. The passing of the stitches in our early operations seemed like a "Chinese puzzle," and more than once we have been obliged to break our needle in order to free it from the silk and avoid repassing. The well curved needle having been threaded is introduced on one side, the patient being recumbent, from below upward or what would be, if the patient were upright, *from* behind forward. Fig. 5. To facilitate passing the needle the flap is held and drawn tense by forceps. The thread is then caught from the eye of the needle by a blunt tenaculum (Fig. 5), one end drawn all the way through and the needle passed back and off the other end. This procedure is easier than if the needle were previously passed in the reverse direction, as is usually recommended.

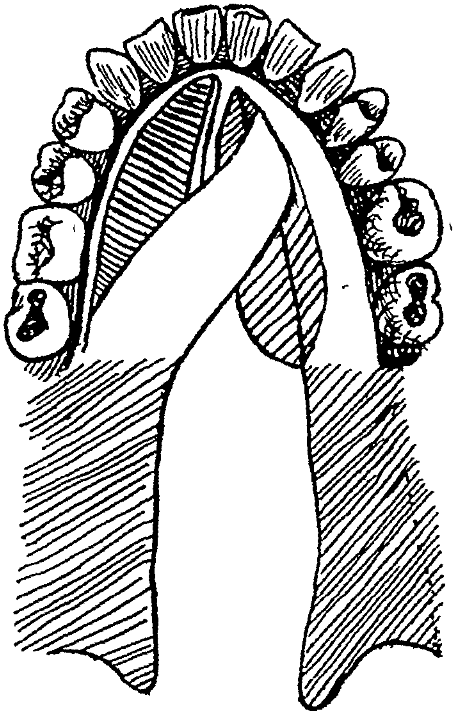

Fig. 4.—*After Davies-Colley.*

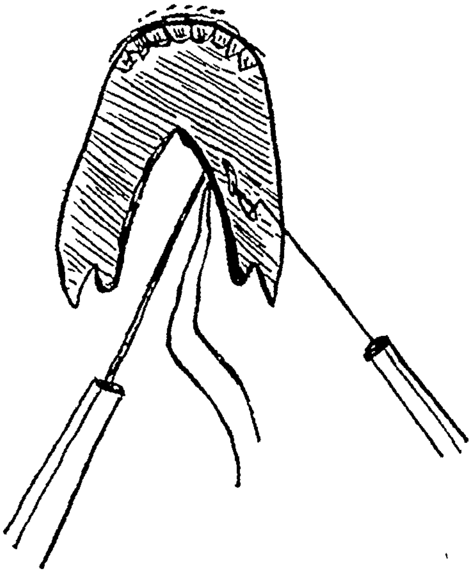

Fig. 5.

It would seem that you might repeat the same method on the other side with the lower end of the same thread, but herein lies the puzzle, for if you do so you will find that you cannot withdraw your needle or liberate the thread. Having passed the suture on one side, one must pass a double thread on the opposite side, drawing up in like manner with a tenaculum the two free ends, which leaves the loop below (Fig. 6); the needle is then drawn back as before and disengaged. Then through the loop is passed the lower end of the single suture and by means of the double thread it is pulled through the opposite side. It is occasionally, but not often, possible by means of a lateral rectangular curved needle, similar to one used in gynecological operating, to pass the single thread through both sides with one sweep of the needle. The method above described is better because greater accuracy of margin width, and point of puncture is obtainable. In passing the stitches great care should be taken to engage sufficient tissue, not getting them too near the edge, and also to have them passed as nearly as possible at points opposite to each other. We have even found it desirable to gain sufficient margin to pass a suture through the very aperture that we had made in dividing the muscles, and do not consider this objectionable. The stitches should be passed at intervals of six to eight millimetres. We have passed here six stitches and we will now proceed to close the cleft.

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[1] British Medical Journal, Oct. 25, 1890.

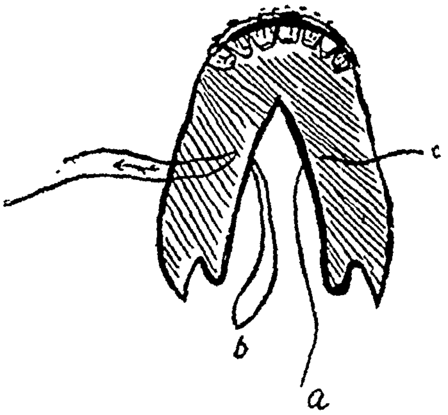

Fig. 6.—End of suture, *a*, is next passed through loop, *b*, which is used only to draw end, *a*, through the flap of that side. Ends *a* and *c* are subsequently tied.

Before tying the sutures special care should be observed to see that the edges are clean and free from clotted blood. Then commencing anteriorly the sutures are tied first by means of a slip knot pushed down by the finger, the suture well-tightened, and again tied by an ordinary knot. As the sutures, one after another, are thus tied, see that the edges are not turned in so as to bring mucous membrane surfaces together instead of freshened edges.

If all of these points are carefully carried out, I think we can promise, in a majority of cases of cleft no more extensive than this, complete union at the first operation. The operation is usually regarded as an unsatisfactory one, because failure instead of success is the rule. Failure to unite by primary union is probably due to incomplete division of the muscles more frequently than to any other one cause; but the good health of the child, the careful paring of the edges and placing of the sutures are also essential points. If, however, complete union should not result at the first operation, we certainly should perform the operation a second or a third time, as the condition of the patient, when grown up, will otherwise be most deplorable. It is rare indeed with ordinary care and skill that partial union will not be produced at the first trial, and this will encourage both parents and surgeons to persevere to a complete result.

Concerning now the subsequent treatment of the patient. At the completion of the operation, before the patient has revived from the anæsthetic, a hypodermic of morphine should be administered. This to prevent; as far as possible, vomiting and excessive crying—in other words, to maintain quietude of the parts. We consider it best, although all authorities will not be in accord with this opinion, to keep the patient partially under the influence of morphine during the first three days, for the same reason. The stitches may be removed from the sixth to the tenth day. Some of them by the sixth day will have ulcerated out on one or both sides, but this matters not when primary union is secured, and if primary union is not secured the stitches will not hold the parts together after the third or fourth day. But as a matter of precaution, to give some strength to the newly formed union, the stitches may be left until the time stated. For their removal an anæsthetic should be administered.

Note.—Complete primary union—perfect closure of the cleft was secured in this case and a letter from the father written some weeks later states that the mouth has a natural appearance, swallowing is perfect and speech is being correctly acquired.

REPORT OF THE SURGICAL CLINICS,

Held at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College.

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(Continued from page 389.)

There is lengthening of the arm in all the forms except the subclavicular; in the subglenoid there is the most lengthening, which is about an inch. In a fracture of the humerus, the depression below the acromion is not so marked as in luxation.

Calloway's test is to measure with a tape-line the circumference of the shoulder, passing the tape through the axilla and over the acromion process of each scapulæ, when it would be found that the injured shoulder would measure about an inch more than the sound one. This was said by Mr. Calloway to be an infallible test. There is one exception to this test, that is in a fracture of the neck of the scapula; but it is a very rare form of fracture. Dugas' test is to put the hand of the injured limb on the sound shoulder, then if the elbow touches the chest, no dislocation exists; while if it cannot be done, it proves the presence of a dislocation. This test will fail you in fat subjects. Another test is to take a flat board or ruler and place it along the outside of the arm; it will leave a space or opening between it and the arm when dislocated, but none when it is in its normal position. Another test is to measure the length of the arm from the acromion to the point of the elbow or the olecranon process and comparing it with the sound side.

When you can feel the head of the bone in a new position you can easily differentiate the different varieties of luxation, providing your subject is not too fat or muscular.

The principal methods of reducing shoulder-dislocations are: 1. Manipulation. 2. Extension and counter-extension, and 3, same as the second combined with leverage or manipulation.

Kocher's method by manipulation is to hold the elbow close to the side of the patient, take hold of the forearm and rotate it outwards, then elevate the arm and rotate forward and downward. The method that most frequently succeeds, is that of placing the heel in the axilla, using it as a fulcrum and the arm as a lever; in this way you pry, as it were, the bone into its place. In addition to the leverage, you pull the arm downward and a little forward. If these methods fail, anæsthetize your patient and make extension directly outward from the body. You must be careful in old dislocations like these, because you may rupture the axillary artery or vein; and even the humerus has been fractured in attempts at reduction. Sir Astley Cooper has advised that a dislocation of over three months' standing should not be reduced, because of the danger, and that a very useful joint is finally acquired in its new position.

This man being now anæsthetized, the first thing to do is to break up the adhesions before you attempt reduction. We first try by extension and counter-extension, with the heel in the axilla. It is now reduced. There was no click when the bone went into the socket; but we do not expect it, on account of the glenoid cavity being filled with fibrous material. You notice that the prominence of the acromion has now disappeared. It will be bound up in the position employed in Dugas' test, and left a week before it is taken down. I find, also, by measuring that the length of the two arms is equal. I will apply a Velpau bandage, pinning it at all its reverses, because if this is not done, it would not remain twenty-four hours. It will be left as I have said for a week or ten days, when passive motion will be employed at intervals of every twelve hours.

CASTRATION.

This patient, aged 60, was operated on four months ago for the radical cure of hernia by Dr. McFarland. The operation was well done and the hernia has not been down since. Since the operation he has suffered with great pain in one of his testicles, and is unable, in consequence, to do his usual work. It is very liable that the cord has been caught in the cicatrix or that there is pressure on the spermatic nerves.

I will remove the testicle to-day; he has begged us for some time to do so, taking into consideration his age, and that his procreative power will not be destroyed should he desire to use it, we think it best to remove it. The celebrated Bob Ingersoll has said that if he would have power over some of the affairs of mankind, that instead of men shedding their hair when they get old, he would have them shed their testicles.

I will cut directly through the cicatrix of the incision that Dr. McFarland has made and on down to the testicle on the right side. In the operation of castration, some surgeons clamp the cord and ligate the artery, this is not a wise plan, because the artery may retract and we may have secondary hæmorrhage. I tie the whole cord and allow the ends of the ligature to hang out of the lower end of the incision to serve as a drainage. If I have failed to get high enough to relieve the nerve in the cicatrix, this operation will have done no good and the pain will continue as before; but I hope I have gone high enough. I now unite the edges of the incision in the scrotum with continuous sutures. You notice the ends of the ligature traverse the whole length of the wound and thus will drain it.

I dress it with the ordinary antiseptic dressings and hold them in position with a spica bandage of the groin. I will not touch this for four or five days unless his temperature rises. For retaining dressings, the crinoline bandage, which I have here used, is the best I know of, because there is some sizing in it and hence adapts itself better to the parts than an ordinary muslin roller.

A SPECIMEN SHOWING THE INCISION IN TRACHEOTOMY.

I have here a very interesting specimen I want to show you. There has been a patient in the hospital for several months suffering with syphilitic laryngitis; he would have paroxysms of dyspnœa which would be relieved with doses of tartar emetic. Last night the patient was breathing very hard and likely to expire when the resident physician, Dr. Graham, very properly opened the wind pipe. The patient, however, died some hours afterward, and I have here his larynx and wind pipe, which you can examine. I show you this specimen to impress on you never to allow a man to die for the want of air. The operations for this are laryngotomy and tracheotomy. In the former, the incision is made longitudinally through the skin, then transversely through the cricothyroid membrane. In the latter operation, an incision in the median line is made about an inch and a half in length, extending downward from the cricoid cartilage. The fascia, sterno-thyroid muscles and veins are pushed aside from the front of the trachea, the thyroid gland is pushed up, after which the knife is inserted in the bottom of the wound and the incision made upward, so as to divide two or three rings of the trachea. The latter operation was performed on the patient I have described, as you will notice by the specimen.

January 10, 1891.

SARCOMA ON THE LEG.

Gentlemen: I have a case to bring before you to-day which Prof. McCann showed you on last Tuesday. It is the boy with the large tumor on his left leg.

The history of the case is as follows:

Jonas Keller, æt. 17, was admitted to the hospital December 31, 1890. He has always been healthy prior to this trouble; there is no history of cancer or consumption in the family. He was struck on the calf of his leg with a harrow-tooth six or seven years ago, which left a small tumor that caused no pain or trouble until seven months ago, when it began to grow rapidly. At present there is a tumor the size of a child's head, which is broken down and presents a fungus-like and bleeding surface. It emits a very offensive odor and there is some discharge. He suffers much pain and requires anodynes at times.

The foregoing is a common history of a malignant tumor.

A sarcoma is a neoplasm growing from connective tissue. The cells of a sarcoma are of three varieties, viz.: 1. Round cells. 2. Spindle cells, and 3. Giant cells. They are all malignant and almost invariably return after their removal.

I operated on a lady in this hospital last August, one year ago, that had a large osteo-sarcoma on the thigh. I amputated the limb at the hip-joint, she made a good recovery, and died afterwards from typhoid fever. This is the specimen I now show you, which I removed, and it is certainly a very interesting one.

I have promised this boy to remove the tumor, but my impression is that the only thing that can be done is to remove the entire limb at the knee-joint; there is a slight enlargement of the glands in the groin. A contusion of a limb, or foot, or even a corn will sometimes cause the enlargements, which are called by some "wax-kernels." Hence, I do not think that it is a secondary infection, but that the enlargement of the inguinal glands is due to the irritation. The tumor is movable on the bone; I will cut down directly on it to see if there is a capsule. I find it composed of a brain-like substance, which indicates its malignancy. I will give this boy another chance for the saving of his leg, and remove just the tumor because both the tibia and fibula are intact.

The best way to stop oozing after any operation is to apply a compress, wrung out of water as hot as can be borne with the hand. This allows a clot to form in the mouths of the vessels. Do not sponge a wound off, for in so doing you prevent a clot from forming. I think it a good plan to apply a solution of chloride of zinc, grs. 40 to an ounce of water, which is said to have some efficacy in preventing a return of the morbid process. The gastrocnemius muscle is nearly all destroyed by the tumor. After applying the zinc solution, I insert a large drainage tube in the bottom of the wound and unite it with cat-gut sutures. The usual antiseptic dressings are applied. We will watch the boy's temperature very carefully, give him an anodyne and wait for results. We will have the tumor examined microscopically by Dr. Matson, our professor of pathology, and see what kind of cells it is composed of. I think it is a round celled sarcoma.

SIMPLE FRACTURE OF THE LEG.

This patient, Mr. Baker, æt. 36, was admitted December 31, 1890. He fell from a ladder, the distance of three feet, alighting on his right foot, fracturing the leg. After this accident, with the aid of friends he walked two squares, then got in a buggy and came to the hospital. It is a simple fracture of the leg, but it is different from most fractures, so that it will be interesting for you to see. You notice the amount of ecchymosis.

Lead-water and laudanum was applied to reduce the inflammation and swelling. This discoloration might be mistaken by some for mortification, but it is only due to an extravasation of blood underneath the skin. There are also some blebs here which indicate a low state of vitality in the limb. The treatment has consisted of elevating the limb, putting it up in dry antiseptic dressings with plenty of cotton but no tight bandages applied. This man has been intemperate in his habits, and this is against the rapid healing of the fracture. Because he has been daily accustomed to using whiskey, we are giving him three tablespoonfuls of whiskey with three grains of quinine four times a day as a tonic. This is just a simple fracture of both bones of the leg. In a few days we will put it up in a plaster dressing.

AMPUTATION OF FINGERS.

This patient is a brakeman and had his right hand caught between the bumpers of the cars and came in here yesterday morning. It is important in examining a crushed hand to see if any of the joints are opened. I find that the metacarpo-phalangeal joints of the little and ring fingers are both opened and that their metacarpal bones are fractured. Our operation will be to remove the parts hopelessly lost. I am certain that if these fingers were allowed to remain they would slough, and hence, it is best to remove them at once. I have now amputated the two fingers and I bite off the fractured ends of the metacarpal bones with a bone forceps. We cannot do a regular amputation in these cases, but must get the flaps as best we can. We do not expect union by first intention in this case. I close the wound with wire sutures and apply the antiseptic dressings.

January 17, 1891.

OPERATION OF TREPHINING.

Gentlemen: We have here a patient who received an injury to his skull shortly after the Johnstown flood. It was not a severe wound, but after the injury he suffered from much headache, was unable to work and lacked precision in his movements. I have succeeded well in all my operations of trephining the skull. This is now the fourth operation within a few years and in every instance the patients have been benefited, even if I did not find what I trephined for.

I find a slight depression at the point of injury in this man's skull, and we may find a depression or a spicula of bone causing this man's trouble. We do not replace the button of bone as you know, and of which I have spoken to you about at previous operations of this kind. The history of the case is as follows:

S. C. Bowers, æt. 30, while superintending the construction of a bridge at Johnstown on June 8, 1889, which was a week after the great flood there, was working at the foot of the trestle and a spike mall fell from the top of the structure and struck him on the head in front of the parietal eminence, and on the right side of the sagittal suture, producing a large scalp wound which healed rapidly. The attending physician said there was also a fracture of the skull. He now complains of headache, blindness and dizziness on stooping and a bearing down pain at the seat of injury, as he expresses it. As the symptoms in this are general we will not try to localize the trouble in the brain, but will trephine directly over the seat of injury. The instruments I intend to use have been in boiling water for thirty minutes, and are now immersed in a solution of carbolic acid. The patient has been prepared for the operation by being given a cathartic last night and the bowels moved this morning. The scalp has been shaved, thoroughly washed with soap and water, then with ether and alcohol, and finally with the bichloride solution. We we will make the scalp wound in such a manner that it will drain well while the patient lies in bed and hence I will make a horse-shoe shaped incision. After turning back the scalp, I find the bone depressed at the seat of injury to the scalp. Regarding the trephine and its use I have spoken to you about at previous operations of this kind, and hence it will be unnecessary to do so to-day. I don't want to injure the dura mater at all, because it would add much to the gravity of the operation; otherwise, if carefully done with strict antisepsis, there is very little danger connected with trephining the skull. I have now removed the button and find no spicula on its internal surface. I next search with a probe around the trephined opening, but do not discover anything. I will not open the dura mater now, because if this operation does no good a subsequent one can be performed. I still prefer the metal sutures, although their use is falling into disfavor with foreign surgeons. We will use a few strands of catgut for drainage and allow it to remain a few days. In no other part of the body do wounds heal as rapidly as scalp wounds. I suppose it is on account of the great vascularity of this region. This man has lost considerable blood during this operation, but I think it will do him good rather than otherwise. It is contended by some that the anæmia, which is produced by this operation, is one of the factors in benefiting the patients. After having united the incision with sutures I direct a stream of the bichloride through the wound to rid it of any blood clots. I apply the usual antiseptic dressings and bind them with a six-tailed bandage.

AMPUTATION AT THE ANKLE JOINT—SYME'S OPERATION.

This patient has been in the hospital for disease of the bones of the foot before this, and he is now brought here by Dr. McClellan, of Irwin, Pa. The patient is a miner æt. 50; nativity, Wales; his family history is good and he always has been a healthy man. On January 3, 1890, his physician opened some sinuses about the joint, and on September 3, 1889, there were some incisions made about the joint when he was in the hospital. A sanious discharge still continues from the sinuses. It appears to me as a tubercular disease of the bones of the tarsus. The ankle is swollen and a number of cloaca open on different parts of it. Inserting a probe I come down directly on carious bone. All these sinuses lead to the ankle joint. The man is very anxious that the foot be removed so that he may be able to go to work and support his family. I amputated a leg some time ago in which the ankle and leg were infiltrated, and numerous sinuses existed. I removed it at the ankle, treated the sinuses, and it healed very kindly. There is an osteoplastic operation on the foot, first introduced by a Russian surgeon in 1871. It consists in removing the diseased bones of the tarsus, the astragalus and os calcis, then sawing through the scaphoid and cuboid and also sawing off the ends of the tibia and fibula, and then bringing the two sawn surfaces together. In the resulting stump the patient walks on his toes as in talipes equinus. Twenty-one of these operations have been reported and with good results, four of which were in this country.

I would do the operation in this case if he had some other occupation. It is a good operation to perform on a lady. The incisions in this case are made as follows: The first one from the tubercle of the scaphoid bone across the sole of the foot to a point on the outer surface of the foot, just behind the prominence of the base of the fifth metatarsal bone; the second incisions are made from the ends of the first incision to the malleoli; and the third incision is made around behind the ankle and connecting the malleoli. I will perform a Syme's operation in this case. There is probably no other operation on the foot that leaves a stump so good and useful as that of Mr. Syme. The other operations on the foot are Hey's, which consists in amputating all the metatarsal bones and in sawing off the projection of the internal cuneiform bone. Chopart's, or the medio-tarsal, consists of removing all the tarsus except the astragalus and the os calcis. Pirogoff's consists in removing all the bones of the foot except the posterior part of the os calcis, which is brought into apposition with the sawn extremities of the tibia and fibula.

In the Syme's operation I insert the point of the knife at the external malleolus, then carry the knife across the sole of the foot and up to within about a half inch of the internal malleolus, then join these two extremities of the incision transversely across the front of the ankle joint, then to open the joint, sever the lateral ligaments. There is much discussion about the better way of dissecting out the os calcis. Some advise dissecting from above downward, and others from the heel backward.

The latter is the method advised by Mr. Syme. I rather think it is easier to dissect from above downward. I find the ends of the tibia and fibula are diseased, hence I will saw them off, and having done so, now I find them healthy looking. On the outer side of the leg is a sinus which I scrape out with a Volkmann's spoon, and wash it thoroughly with the bichloride solution. It is a great advantage to save the tense tissues covering the heel, which makes a good solid stump so that this man will be able to continue his occupation without much inconvenience. I unite the flaps with wire sutures and apply the usual dressings.

January 24, 1891.

Gentlemen: You will remember this first case I bring before you to-day as the man I had before you a week ago. I trephined his skull and removed a button of bone for some trouble he had since the Johnstown flood. He says that he is a good deal better. We found, I think, an adhesion of the dura mater to the skull, which I think was the cause of his trouble. This has been dressed but once since the operation. You see there is no suppuration. Every alternate suture has been removed, and I will now remove the remainder.

The second case I bring before you is the boy from whose leg I removed the large sarcoma two weeks ago to-day. You remember when we commenced the operation we were uncertain whether we would remove the tumor only or the leg, but on cutting down I found that the tumor was not adherent to the bone, and then I removed just the tumor. There is no sign of the return of the disease. The boy has good use of the foot and is able to bear some weight on the limb.

LIGATION FOR AN ANEURISM OF THE BRACHIAL ARTERY.

Gentlemen: Here is an exceedingly interesting case, the history of which is as follows: Curt Stickler, æt. 18, while carrying a cross-cut saw under his left arm, stumbled and fell, causing three teeth of the saw to puncture the inner side of his arm, the one causing but a slight wound, the second punctured a vein which bled profusely, and the third caused a deep wound, but did not bleed much. These wounds all healed in a week. The accident occurred the latter part of July, 1890. About six weeks ago he first noticed a swelling on his arm where the injury had been. Pain never was a symptom in the case; he gives a good family history.

It is important when you have a swelling like this to be sure what you have to deal with. This swelling is not as hot as an abscess would be. A distinct pulsation can be felt and is exerted equally in all directions. By making pressure on it with the hand it can almost be pressed away and on removing the compression it quickly returns to its former size. By putting my ear to the tumor a peculiar sound can be heard which is very characteristic. This is an aneurism of the brachial artery. An aneurism is a blood tumor communicating with the interior of an artery. A noted surgeon once received a patient with a tumor in the popliteal space which a number of physicians had examined, but were uncertain as to what it was.

The surgeon diagnosed it as an abscess, and was gratified, on plunging a knife into it, to see the pus flow from it. A short time afterward he received a similar case which he diagnosed as an abscess, and when he plunged a knife into it a quantity of blood poured out, proving that it was an aneurism. This mistake so weighed on his mind that he went and committed suicide by opening his own femoral artery. If the brachial artery had been wounded in this case, he might have bled to death before a surgeon could have reached him.

My impression is that the teeth of the saw ruptured the inner and middle coats of the artery and probably bruised the external coat, but not rupturing it. The bleeding that followed the accident was due, no doubt, to injuring a vein.

As to cause, there are two varieties of aneurism, viz.: Idiopathic and traumatic. The former being caused by diseases of the internal and middle coats of the vessels. Fusiform or tubular aneurism is one in which all the coats of an artery are dilated; it is usually found in the large arteries, as the aorta, iliac, and femoral. Sacculated aneurism is one in which there is dilation of only one side of the artery, caused by an injury or ulceration. There are two varieties of this form, one of which is where all the arterial coats give way and form the sac wall; this is known as "true aneurism," the other being one in which the external coat forms the wall of the tumor; this is also known as "false aneurism."

Dissecting aneurism, the third form, is rare and is found almost exclusively in the aorta, and in which the blood finds its way between the arterial coats. In the treatment of this aneurism compression could not be done on account of the pain produced by the nerves in this location.

We propose to ligate the brachial a little above the middle. The collateral circulation in the arm will be carried on by branches of the circumflex anastomosing with the recurrent radial, ulnar, and interosseous arteries. The old operation of ligation known as "Antyllus' method," is to cut down and apply ligatures, both above and below the aneurism. Anel's operation is to apply a ligature to the artery immediately above the tumor. John Hunter advised ligating at some distance above the aneurism, thus allowing some blood to pass through the sac by the collateral circulation. This is known as the "Hunterian method." Brasdor's method is to put a ligature on the distal side of the tumor when it is impossible to apply it on the cardiac side.

If you were to cut down in this tumor, you would find layers of fibrin, while in the centre you would find, still, fluid blood. Irish surgeons have advanced the treatment by pressure on the proximal side of the tumor, so as to retard the circulation and cause the contained blood to be deposited in layers of fibrin. This patient was sent here by a former student of this college. I propose to do the Hunterian operation in this case. There are three points to remember in the operation of ligation: 1, finding the sheath; 2, opening the sheath; 3, ligating the vessel proper.

For the first you must know the surgical landmarks and anatomical relations, making the incision in this case along the inner edge of the belly of the biceps. In doing the second, you take up the sheath with forceps, and cut a notch where you expect to apply the ligature. Sometimes the basilic vein will be in the way in this location. I have now cut down to the sheath. I open it and pass an aneurismal needle around it, armed with a catgut ligature. I now tie the ligature, making first a friction knot, and the second not too tight, because there is danger of rupturing it. You observe there is now no pulsation in the tumor. I will cut the ligature short, and sew up the wound with continuous sutures, believing I have done the operation antiseptically. Care must be exercised in ligating the brachial, because the median, ulnar or internal cutaneous nerves may be mistaken for the artery. Now the danger is that gangrene might result on account of the cutting off of the circulation to the arm. We must take good care of the arm—elevate it, and keep it warm by wrapping the whole arm and hand with thick layers of cotton and apply bottles of hot water around it. You will find the subject of aneurisms very interesting. Its history reads like a romance to those who are interested in the matter. Mr. Valentine Mott, a noted American surgeon, once tied the arteria innominata, and ever afterward spoke of this great operation as his Waterloo operation, although his patient died in a short time after the ligation. He has ligated the common carotid at least fifty times. Dr. Smyth, of New Orleans, ligated the innominate artery, and the patient lived for two years afterwards, and performed his duty as a sailor.

COMPOUND COMMINUTED FRACTURE.

Here is a very distressing case, sent here by Dr. Sell, from Greensburg, Pa. This boy, with three others, was coasting on last Christmas day, this boy occupying the front of the sled, and while descending the hill collided with a post, sustaining a compound comminuted fracture of the left thigh. The surgeons at Greensburg removed a piece of bone 1½ inch long. When admitted to the hospital, the wound in the thigh was discharging pus quite freely, and he also had four very foul ulcers about the left ankle, and a bedsore over the lumbo-sacral articulation.

The bones now are not in apposition, the result of which is an extensive burrowing of pus along the muscles of the thigh. He will soon lose his life from septicæmia or pyæmia if nothing is done for him.

I intend to make a counter-opening on the posterior surface of the limb, thus securing the so-called through and through drainage, and thus prevent it from collecting in the wound as it is doing now. I think this will be more important than wiring the bones together, which I will also do. I first enlarge the wound on the outer side of the thigh, and you can now see the upper fragment denuded of its periosteum.

I have now removed three pieces of bone, each one about 3 inches in length. I saw off about 2 inches of the upper fragment, and also the end of the lower one. I now make the opening through the posterior surface of the limb, so as to secure thorough drainage. I now drill a hole in each fragment, and wire them together.

The wire will not do much good except keeping the bones from separating widely. I close the wound with wire sutures. By measuring I find that the limb is now 3¾ inches shorter than the other. I will now apply a straight splint, made out of binder's board, extending the whole length of the limb, leaving an opening in it at the place of the wound.

January 31, 1891.

Gentlemen: The first patient I will show you to-day is the case I operated on one week ago for an aneurism of the brachial artery. It has not been dressed since the operation. I purposely postponed the dressing of it, so as to show you how well we have succeeded in our antisepsis, and also that you may observe every step in the progress of the case. You remember the aneurism was larger than an orange, that the artery was ligated on the proximal side with chromatized catgut and the ligature cut short, and that the wound was sewed up with continuous sutures. There is now no pulsation where the aneurism had been. Twenty-eight hours after the operation the pulse could be felt in the radial artery. This rapid establishment of the collateral circulation was due, no doubt, to the fact that it had somewhat taken place prior to the operation, on account of the presence of the tumor.

After the operation he was put to bed, the arm wrapped in cotton, and bottles of hot water applied. This was done to prevent any tendency to gangrene which might have occurred. You see there is no pus, and the wound has healed nicely. There has been no elevation of temperature at any time since the operation.

The artery was ligated probably between the superior and inferior profundæ arteries. This has certainly been a very instructive case to you. We will allow this boy to use his arm a little now.

(*To be Continued.*)

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY DR. H. GRADLE.

LECTURE III.

The knowledge that a given disease is of parasitic origin is but a part of its etiological study. We must complete our information by learning the mode of dissemination and transfer of the parasite, and by examining all condition and factors, which bear on the possibility of infection. Let us, in the first place, trace the distribution of microbes from the infected patient to others.

The simplest problems we will meet in the case of venereal diseases. Gonorrhœa and genital chancres are always the result of direct contact with other infected individuals. But chancres on other parts of the body have often been transferred through media, such as pipes, tools held in the mouth, unclean surgical instruments or tatooing needles. The syphilitic virus can evidently retain its vitality for hours, or possibly a few days while clinging to objects outside of the body. The possibility of the mediate transfer of virus should always be in the mind of the physician, because it is a danger that can be controlled. Through the teaching of Lister, surgeons have become fully aware of the responsibility of having the fingers, the instruments and the skin of the patient to be operated upon clean in the bacteriological sense. But mediate transfer is also a very important danger in some diseases, other than those seen by the surgeon. In diphtheria, for instance, the bacilli exist in the fluids of the mouth and according to Roux and Yersin,[1] may persist there for a fortnight after the recovery of the patient. What chances are thus offered for the conveyance of the germs on the surface of spoons, handkerchiefs and toys! How often, too, are cases encountered in practice, where the contagion of scarlet fever can be traced with almost absolute certainty to infected clothes, books of circulating libraries or even letters.

The dissemination of virus in the form of atmospheric dust can occur directly, whenever the skin scales, as it does after scarlet fever and measles, provided the virus exists in the epidermis. But from moist surfaces the air cannot take up any solid particles. However, in diseases of the respiratory passages as coryza, bronchitis, and particularly in pulmonary tuberculosis the virus is cast off in quantity in the sputum. Wherever this dries, be it on a handkerchief or on the floor, it forms a crust, which any mechanical force can crumble. As soon as it is broken up finely enough, currents of air can now *take up the infectious dust and disseminate it.* The researches of Cornet have shown that these occurrences explain the spread of phthisis. Shortly after the discovery of the bacillus of tuberculosis a bitter, and we might add, a most unwise discussion pervaded medical literature, as to whether consumption is contagious. It seemed to be overlooked, by both sides, that a disease may be parasitic in origin and still not be directly transferable through the commingling of the sick with the healthy. An illustrating example is trichinosis. Here the proofs of the infection by trichinæ are so evident, that they cannot be ignored. Yet no one considers trichinosis contagious from man to man. The consumptive *patient*, too, is not a source of contagion directly, but his *sputum* may be such, if not properly disposed of. Cornet found that in rooms where consumptives spat on the floor or into cloths, dust could be collected from the walls and furniture which produced tuberculosis in animals, while in well-kept hospital wards, where spittoons were used and cleaned, no germs of consumption could be detected. As tuberculosis is always localized at first in that part of the system where it enters, there can be no doubt that pulmonary phthisis is produced by the inhalation of the bacilli suspended in the air. There is thus a chance for the acquisition of consumption wherever patients have lived without taking care of their sputum, which means nearly everywhere.

The physical conditions for the dissemination of the virus are the same in all other instances where infectious discharges can in any way dry, as in all parasitic diseases of the respiratory passages, in influenza and in the case of the micrococci of pus. Perhaps, however, there are not many microbes which can remain alive after dessication as long as the tubercle bacilli.

As far as we can judge from chemical evidences the plasmodium of malaria is likewise suspended in the air in the districts which it inhabits. This microorganism, it seems, is not transported by winds to any distance from its natural home.

Dust, however, does not remain suspended in the air indefinitely. The air purifies itself by the deposition of the floating matter. According to researches by Hesse and others we must regard the bacteria floating in the air as colonies on the surface of motes rather than as isolated cells, and objects of such size will settle all the sooner. Indeed, under ordinary circumstances there are but very few germs in each liter of air. The possibility of air infection diminishes hence rapidly as we recede from the source of the infectious dust. But, on the other hand, deposited dust may be carried on the surface of clothes and other objects to any distance.

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[1] Annales Pasteur, July, 1890.

Intestinal discharges contain the virus in typhoid fever, cholera and probably all infectious bowel diseases. These microbes, as well as those contained in sputum or purulent discharges thrown on the ground, ultimately reach the soil which we must next consider as a medium in the dissemination of germs. Of course, we include in this study not merely the natural ground, but also all organic refuse dumped on the soil.

Even before the days of bacteriological knowledge it had been recognized that the virus of some diseases can only be transmitted from patient to patient, and it was therefore called *endogenic* virus. In other cases, however, an *ectogenic* virus was supposed to be capable of multiplying in the soil or at least outside of the animal body. Bacteriological studies have confirmed this distinction. The parasites of leprosy, and tuberculosis, and as far as we can now judge the unknown virus of syphilis and the exanthematous fevers can only grow in the animal system, or if at all in artificial dead media, only under conditions attainable in the laboratory and not occurring in nature. In the cases of such microbes of strictly parasitic habits, the soil plays no rôle in their dissemination. But the microbes of diphtheria, of erysipelas, of suppuration, of typhoid fever and of cholera, as well as some other diseases are not limited to a parasitic existence. They can be made to grow readily in nutritive soil, outside of the body. These bacteria can hence vegetate, under conditions actually realized in nature, and may thus lurk wherever organic refuse can furnish them the necessary food, ready to invade again the more congenial soil of the living body. While it is questionable, whether these *facultative parasites* can continue their existence outside of the body indefinitely on account of the competion with putrefactive bacteria, even their temporary abode in the soil or drinking water, is a menace to public health. There are, however, other microorganisms, which live entirely in the soil and only occasionally find entrance into the animal system. Amongst them are the bacilli of tetanus and of malignant œdema, the proteus bacillus, which has been found in human bodies, the plasmodium malariæ and probably also the bacillus of anthrax. In the etiology of the diseases caused by these occasional parasites, the soil is the medium of paramount interest.

Bacteriological analysis has shown that the soil of the earth teems with bacterial life in its upper strata, the number and variety of microbes being somewhat in proportion to the amount of organic refuse which has accumulated. As we enter deeper down, the micrococci soon disappear and only the spore-bearing bacilli persist, until at a depth varying from three to six feet, exceptionally up to twelve feet, all bacterial life ceases. The immense majority of the microbes of the soil are not pathogenic, but are distinctly useful in preparing the ground chemically for the vegetation of higher plants. But the bacilli of tetanus and of malignant œdema have been found in nearly all samples of earth tested, and occasionally the staplylococci and some less well known but not indifferent bacteria have also been met with. Our present knowledge thus warrants us in considering the soil everywhere the ultimate home of the virus of tetanus, and of malignant œdema, a very rare disease in man, as well as of the miasm of malaria in certain localities. It is presumably also the permanent abode of the cholera bacilli in some parts of India and of the anthrax bacilli in some infected fields, and it may be the temporary medium in which the parasites of maladies, like cholera, typhoid fever, the various surgical infections, perhaps diphtheria, and possibly some other "filth diseases" can lurk for a greater or shorter time, whenever they have been introduced by accident.

The manner of infection from the soil has been well elucidated in the case of anthrax by the researches of Koch.[2] An animal dead from this disease spreads the virus on the ground by means of the discharges and bloody exudations. The further dissemination can be stopped by deep burial of the cadaver, for in the absence of oxygen, and in the low temperature at the level of the frost-line, the bacteria remaining in the body will soon die. But some contamination of the surface soil is unavoidable if the cadaver has fallen and remained there for even a short period. Pasteur has suggested that earth-worms may also bring to the surface virus from the buried carcass, and has indeed shown the possibility of this occurrence. But as the buried bacilli do not survive long, their dissemination in the bodies of earthworms is probably minimal. The bacilli on the surface, however, continue to grow in the soil moistened by the discharges, and if the temperature is not below 15° C., spores will form in the course of one day. Anthrax spores are so resistant to all influences that there is probably no factor active in the soil capable of destroying them, except, possibly, sunshine on the surface. Hence, a meadow once infected remains so forever. But the anthrax bacilli can also grow in infusions of leaves and refuse such as do occur in stagnant pools, and hence, under favorable conditions of temperature and moisture, the dangerous microörganisms can spread enormously. Inundations are known to favor their dissemination. As a matter of experience, the most dangerous fields are those possessing a calcareous soil, which observation agrees with our knowledge that the parasites thrive best in a neutral or alkaline medium. As the susceptible animals, cattle and sheep, take their food from the surface of the ground, there is thus sufficient opportunity for the ingestion of spores, which, after germinating in the intestines, ultimately enter the system.

Direct infection of wounds may also occur. This is perhaps an exceptional mode of entrance for the anthrax parasite in the natural infection of animals, but it is the usual way in which tetanus is contracted by animals and man.

The most direct relation of the soil to human health is through the medium of drinking-water. All water coming from the earth below the bacteria-bearing strata is sterile, as shown in the most conclusive way by Fraenkel. The soil is a filter which retains all bacteria if the water percolates a sufficient distance. Hence driven and deep tubular wells are free from all contamination. But ordinary dug wells, or any wells drawing from a stratum of water near the surface, may become contaminated by direct introduction of refuse, or by leakage from cesspools through crevices or through imperfectly filtering strata of coarse gravel. Open bodies of water are, of course, still more exposed to all sorts of contamination. Much labor has been spent on the problem whether pathogenic bacteria, especially those of typhoid fever and cholera, can grow in drinking-water. At any rate, it has been shown that a multiplication of the bacteria is possible if the water contains enough organic residue. This amount, of course, varies with the purity of the water. On the other hand, pathogenic bacteria are easily crowded out by the better adapted, harmless water bacteria. As these vary in number and kind in different samples, no absolute rule can be stated applicable to all water, as to whether infectious material can multiply in it. There is no doubt, however, that the different parasites which can enter the human body through the intestinal canal can at least remain alive in drinking-water for a variable length of time. It has even been claimed by Lortet[3] that different pathogenic bacteria can sink to the bottom, and there continue their existence. He states that he has detected them in the mud 150 feet below the surface of Lake Leman (Switzerland).

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[2] Mittheilungen aus dem kaiserlichen Gesundheitsamte. Bd. I, 1881.

There are on record many instances in which cholera, typhoid fever and various intestinal diseases have been traced with great probability to the use of infected water. But absolute certainty can only be obtained by the demonstration of the corresponding bacteria in the water. It has been claimed by many observers that they have detected the typhoid bacillus in suspected wells. However, as this microbe is very difficult of identification, the earlier observations are not convincing, but the more recent positive statements by Finkelnburg and by Uffelman seem reliable.

There are no reasons known at present for attributing to drinking-water any infections except those starting in the intestinal canal.

It is at present an open question whether drinking-water is the only medium through which the soil influences human health. Pettenkofer and various of his disciples have shown that the mortality of typhoid fever rises as the level of the water in the surface soil sinks, and *vice versa*. This was first found to be true in Munich, and then confirmed by the records of several other large cities. The relation, however, does not hold good in all places, and we have as yet no satisfactory explanation of the proportionality of these two events.

All sanitary experience expressed, particularly in the statistics of many European cities, has warranted the conclusion that at least all intestinal diseases, but also to a less extent, other acute infections, are reduced in number by the purification of the soil by efficient drainage, and increased by the accumulation of organic refuse and filth.

A medium often accused of disseminating disease germs is sewer gas. The only evidence on this subject, however, is the accidental observation of diseases in houses with defective plumbing. This evidence may be suggestive, but is in no way conclusive. Special experiments, as well as physical knowledge, teach that the air or gases cannot tear away microbes from fluids in which they are suspended. It is true, the germs of decomposing refuse, sulphuretted hydrogen and ammonia are poisonous, but whether they could do damage when diluted to the extent that they actually are, is not known. Moreover, their influence could not cause specific infection.

The multiplication of all ectogenic virus varies with the atmospheric conditions, especially the temperature. Hence, we see a preponderance of intestinal diseases in warm weather. The parasites which have accidentally reached articles of food, thrive best in the heat of summer. The proof of this view is furnished by the successful limitation of summer diarrhœas of infants by sterilizing the milk. On the other hand sunshine is one of the most potent factors in nature in the suppression of bacterial life. But how far its influence extends in reality, is not known. The preponderance of other infections, like the exanthematous fevers, and especially the diseases of the respiratory organs during the colder season can probably be referred to the habits of man. Overcrowding, insufficient ventilation, less frequent change and washing of clothes, can explain the dissemination of some forms of virus in winter.

Besides the distribution of virus in the outer world, etiology must take into account the transient life of parasites on the surfaces of the body. The mucous surfaces, especially, may be more than a temporary abode, they may be a place for growth and reënforcement of pathogenic bacteria, just outside the threshold of the tissues. On the skin Bordone-Uffreduzzi has found regularly some seven kinds of bacteria, none of them identified, however, as pathogenic. According to Welch, the staphylococcus pyogenes albus lives habitually in the deep layers of the epidermus. How persistently stray germs can cling to the skin was too often shown in former days by the shadow of puerperal fever following for weeks in the wake of some unfortunate obstetrician.

On the surface of the healthy conjunctiva, Fick found bacterial life eighteen times in fifty examinations, while wherever any catarrhal secretion occurred, different forms of microbes, including pyogenic cocci and bacilli were invariably detected. In the secretion of the nose different bacteria of pyogenic properties have been found by various observers. It is in the mouth, however, where the greatest variety of bacterial life is encountered,[4] for here parasites at the buccal fluids as well as remnants of food as soil, with the most suitable temperature. Between twenty and thirty different varieties have been found by different observers in the mouth and on the teeth, and their number seemed largest wherever the cleanliness of the mouth was neglected. Many of these parasites have pathogenic properties. Amongst them are the well known pus cocci and in about one-half of all the people the pneumococcos or diplococcus of pneumonia in a state of high virulence.

In the normal stomach bacterial life is destroyed during that period of digestion when the amount of hydrochloric acid reaches about 1.5 parts per thousand. But the secretion of acid is easily deranged, and even if normal, those bacteria which are protected by coarse particles of food not sufficiently chewed may escape its influence.

The intestines harbor normally, at least four or five varieties of bacteria as regular contents, while occasionally many other species may lead there a short existence. Of the normal intestinal parasites the bacterium coli commune processes moderate pathogenic properties according to A. Fraenkel's, and especially Welch's researches. It must be regarded as one of the possible causes of peritonitis, while Welch's observations point it out also as the source of secondary infections complicating other parasitic diseases. The bacillus lactis ærogenes, normally in the intestines, is also not devoid of pathogenic properties, as well as several less well known parasites found there by bacteriologists.

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[3] Transactions of the Tenth International Medical Congress, Section of Hygiene, p. 142.

[4] See important researches by W. Miller, "Die Microörganismen der Mundhöhle," 1889, and Dental Cosmos, September, October and November, 1891.

In the healthy male urethra numerous parasites have been detected, amongst them the yellow staphylococcus.

The importance of bacterial parasites on mucous surfaces is nowhere greater than in the case of the vagina during parturition. The numerous observers who have investigated this region bacteriologically do not all agree. Some claim to have found no microbes in the healthy genital canal, but the preponderance of evidence is that they do exist, at least in many women, and that amongst them there may be virulent staphylococci. It is evident that in such instances puerperal infection can occur, nothwithstanding perfect sterility of the obstetrician's fingers, if the vagina itself has not been sterilized.

The existence of virulent parasites on the surfaces of the body does not necessarily lead to their invasion of the tissues. In the case of the skin, the protection is evidently of a mechanical nature. The bacteria cannot penetrate the superficial epithelial cells. But they can be forced into the glands by friction, and thence infect, as Garré found on his own person on rubbing into the skin the yellow staphylococcus. This possibility explains the cutaneous origin of furuncles in parts subjected to friction. Slight abrasions, moreover, do away with the protection by the epithelium.

Intact mucous surfaces likewise offer a barrier to the invasion of *some* bacterial species. Hence, in the healthy mouth the various parasites found there do not penetrate into the tissues. We can often observe flooding of the conjunctiva with virulent pus from an inflamed tear-sac without morbid consequences. But if, under these conditions, the surface of the cornea is wounded, infection is sure to result. The bacterium coli commune remains in the intestines at all times, but if the mucous surface is injured or ulcerated (perhaps from a different infection), the parasite can invade the living tissues. Traumatism is hence a most important factor in the occurrence of infections. There are, however, other bacteria which require no accidental aid in order to enter the mucous membrane. Thus the gonococci, the virus of syphilis, of trachoma, and presumably of all infectious forms of conjunctivitis, can penetrate at once after they have been deposited on a congenial mucous surface. Judging from inhalation experiments on animals, it seems that tubercle bacilli can also invade the lungs whenever they reach the pulmonary surface. Yet, Koch has pointed out how even tubercular infection can be facilitated by previous desquamation of pulmonary epithelium, for instance, during the course of measles. Besides those instances where certain parasites can invade the mucous membranes, in which they remain localized at least originally, there are other cases in which these surfaces offer no barrier whatsoever to microbes, which soon become generalized throughout the system. Thus, the bacillus anthraxis can penetrate either the lungs or the intestinal surface in susceptible animals, and we must attribute this faculty also to those parasites which will invariably attack every susceptible human individual exposed to contagion — for instance, the virus of the exanthematous fevers.

The penetration of pathogenic bacteria through any of the surfaces of the body results in disease whenever the organism cannot resist the parasites successfully from the start. In natural or acquired immunity the introduction of living bacteria of the species against which the system is protected is harmless, and progressive invasion does not occur. But whenever the immunity is not absolute, the possibility of infection can be increased by any circumstances which favor the bacterial attack or lessen the defense of the organism. The resistance of the living body varies with the organ or tissue attacked by the parasites. Hence, certain forms of virus can enter the body only through certain gates. The tubercle bacillus, for instance, does not readily gain a foothold in superficial wounds. Some bacteria — the tetanus bacillus, the pus cocci, as well as many organic poisons, like toxalbumins and the albuminoids of snake venom—can pass through the healthy digestive tract without danger. The pneumococcus, the direct cause of pulmonary inflammation, was injected by the brothers Klemperer under the skin of their arms without more result than a trifling local irritation.

The occurrence of infection depends, furthermore, on the number of parasites introduced. When the resistance of the organism is altogether inefficient, as in virulent anthrax of guinea-pigs, or in septicæmia of mice, a single bacterium suffices to produce fatal infection.[5]

But in case of active defense on the part of the body, the effect of inoculation depends on the number of parasites. Thus, up to 10,000 chicken-cholera bacteria are tolerated by a guinea-pig without harm; 10,000 and upwards produce an abscess, but 300,000 kill speedily by septicæmia before an abscess has time to form. In Ogston's experiments, staphylococci of pus were innocuous in minimal numbers, produced inflammatory nodules in large quantity, in still greater number, abscesses, and ultimately, pyæmia. These results explain themselves, when we remember that the tissues tend to destroy the parasites, while the latter irritate or kill the tissues by means of the poisons they generate. The more of the specific poison there is introduced with the living parasites, the better can the latter overcome the resistance of the tissues. In conformity with this view, it has been observed that the partial immunity against anthrax does not protect the animal against infection with an overwhelming number of bacilli. Infection with staphylococci is not invariably successful in animals as little susceptible as rabbits and dogs, but can be accomplished with greater certainty if the specific poisons or sterilized cultures of the same cocci are added to the living parasites. Indeed, we must regard the variable virulence of pathogenic bacteria as dependent, at least in part, upon the amount of the specific poison with which they are laden. Hence, accidental inoculation at autopsies with fluids of progressive phlegmons, is more serious, on account of the heavy "charging" of the microbes with their poison, than the introduction of the same cocci cultivated artificially under circumstances less favorable to their virulence.

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[5] The researches on which these statements are based are detailed in an important paper by Watson Cheyne, in the British Medical Journal, July 31, 1886.

An important factor in the occurrence of some infections is traumatism. Not only can mechanical violence open the gates, so to speak, for the parasites, where intact surfaces would bar them out, but it can lessen as well the resistance of the tissues. All surgical experience teaches that bruised wounds are more readily infected than clean cuts. Slight traumatisms are of influence, also, in the localization of virus circulating in the blood. Tuberculosis of bones and joints is often preceded by slight contusions, which would have caused only a transient disturbance had the tubercle bacilli not been in the system. Similar observations were made by Schueller in experiments upon animals. By trifling injuries to joints, and intravenous injection of tubercular material, he obtained articular tuberculosis. In a comparable manner, the staphylococcus aureus, which, when injected into the veins, does not ordinarily infect the marrow of bones, can cause osteomyelitis if a bone be fractured.

SOCIETY PROCEEDINGS.

The Medical Society of the Missouri Valley.

Tri-Session of the Fourth Year held at Leavenworth, Kansas, March 17–18, 1892.

First Day—Evening Session.

The Society met in Chickering Hall, and was called to order by the Secretary, Dr. F. S. Thomas, of Council Bluffs, Iowa, in the absence of the President, at 8 P.M.

The Society was organized at Council Bluffs, September, 1888, with seventy-seven members. Drs. Donald Macrae, of Council Bluffs, Jos. M. Emmert, of Atlantic, Iowa, J. M. Richmond, of St. Joseph, Missouri, and A. S. von Mansfelde, Ashland, Nebraska, have been presidents. The Society now has a membership of 350 of the best physicians in the great Missouri Valley. The success of its' meeting and its wonderful growth is largely due to the untiring energy of the Secretary, Dr. F. S. Thomas, who has few equals in that capacity in any medical society.

The first paper was read by Dr. J. F. Binnie, of Kansas City, Mo., entitled

REPORT OF A CASE OF MICROCEPHALUS; OPERATION; DEATH; REMARKS.

Wm. M., æt 20 months, was sent to me on November 5, 1891, by Dr. George Miller, St. Marys, Kansas, and admitted into All Saints' Hospital. Dr. Miller noticed the posterior fontanelles closed at *two* months and the anterior at *four* months, and that the child began to act strangely when seven months of age. He was unable to hold anything in his hands, or to support himself in any way. He rolled his head and eyes, protruded his tongue all the time, and let the saliva dribble away. The whole expression was idiotic. The mother told me that the child at one time could say various baby words such as boy, dog, mamma, and papa.

Condition on Admission.—The child is in a condition such as Dr. Miller described. He seems to recognize his friends to some extent, and puts out his arms toward them. The hair is unusually long. The occipital region is very prominent and hyperæsthetic. Both frontal and parietal regions are much flattened, especially on the left side.

The mouth remains open, the tongue is partially protruded and saliva constantly dribbles out. The eyes roll, but are not specially prominent.

Diagnosis: Microcephalus obstructing brain development and causing retrograde changes in the speech and motor regions.

Advised Operation.—The head was now shaved, cleansed and covered with bichloride gauze. November 6, 1891. Chloroform having been administered, craniotomy was performed, Drs. Griffith, Morrow and Thrush assisting.

After the usual thorough cleansing of the head, a longitudinal incision was made on the left side parallel to, and about one-half of an inch from, the sagittal suture. This incision began at the anterior margin of the hairy scalp and was three and one-half inches in length.

Anteriorly at an angle of about 60° to the longitudinal cut, an incision 1⅝ inches in length, was made outwards and backwards. Posteriorly at an angle of about 100° to the longitudinal cut, still another incision was made running outward and slightly backward for 1⅜ inches.

Along these incisions the soft parts were reflected and the bone laid bare. Beginning anteriorly it was sought to cut out a strip of bone by a chisel and mallet. After using the chisel for a short time the respiration and pulse became so bad that the child had to be inverted. It appeared to me that this condition was probably brought about by the concussions arising from the method used, therefore, when the child was sufficiently recovered for the operation to be proceeded with, I finished the first cut through the skull corresponding to the longitudinal incision with a Hey's saw, and made another parallel and three-eighths of an inch external to it. The strip of bone between these cuts was removed by means of elevators and forceps. Corresponding to the anterior and posterior lateral incisions through the soft parts, strips of bone were removed with the rongeur forceps. In the frontal region the skull was about one-fourth of an inch thick and very hard. Posteriorly the bone was about one-eighth of an inch thick and not so hard. The dura was not opened. The parts were cleaned with warm water, the wounds sutured with catgut, catgut drains put in anteriorly and posteriorly, and dressings of iodoform and bichloride gauze applied.

After the operation the condition of the patient was extremely poor, pulse very weak, and lips colorless. Patient was wrapped in hot blankets and kept with the head low; whiskey and digitalis were used to combat shock. In spite of all that could be done the child died thirteen hours after the operation was finished. Ten hours after death the head was examined. Wound looked healthy. On removing the calvarium the dura was found to be very firmly adherent to the bone. The sutures were very firmly ossified. Dura was unusually thick and firm. The brain was soft and pale. Vessels of the pia mater well filled. Cerebellum very large. From the Rolandic fissure forward the brain was proportionately smaller than behind. The left side was smaller and flatter than the right anteriorly.

Base of brain appeared normal. The ventricles were empty, their walls somewhat hard. All the gray matter was unusually pale and gelatinous looking, evidently œdematous, but was of normal extent. When laid on the table the brain collapsed to some extent of its own weight, it was so soft.

My excuse for offering a report of a single case of craniotomy is that the operation is one that has rarely been performed, and that every case published may teach us some valuable lessons.

In this operation the chisel and mallet were used with the greatest possible caution, and yet seemed to be the cause of grave symptoms necessitating a prolonged pause. The loss of blood was small and could not, I think, play any practical part in the production of the shock. The same may be said of the anæsthesia, which was at first chloroform, but afterwards ether.

Dr. Lanphear,[1] of Kansas City, has published some notes of a case in which he performed craniotomy; the patient died from shock, and from the account Dr. Lanphear gives of it, I am inclined to believe that the chisel and mallet had very much to do with the production of this fatal shock.

Tuholske[2] has had an experience with the chisel and mallet similar to mine and has practically come to the same conclusions as I have been forced to, viz.: that however appropriate the chisel and mallet may be for opening the adult skull, in children even when the sutures are firmly ossified, they should not be used.

How, then, should we operate? There are, of course, several suitable ways in which we may open the skull. 1. If we wish to make a clean cut we may use either Hey's or MacEwen's saws; or 2, if we think a clean cut offers no advantages we may use a small trephine with which to make the initial opening, and from the trephine hole "snip" out as much bone as is necessary with rongeur, or Keen's[1] modification of Hoffman's forceps. To me the latter method seems he better as it can be carried out much more rapidly than he former, and bleeding from the cancellous tissue is less pt to annoy us after a punching than after a sawing of the bone.

What is this condition of which we have been speaking — his microcephalus or microcephalia? Ziegler[4] considers hat it is an arrest, or rather failure, of development, an *genesis*, due either to intrinsic causes or to injurious influences exerted on the embryo. It is, accordingly, very commonly found in association with other morbid alterations in he brain and other organs, and is partly a consequence and partly a concomitant of these. "Porencephalia (ventricular hydrocephalus), meningeal inflammation and premature synostosis must occasionally be regarded not as mere concomitants of the defective cerebral development, but as the primary changes which have led to it."

Victor Horsley,[5] in an article on this subject, quotes Lannelongue's views with approval. These views are that Virchow is wrong in considering microcephalus to be due to premature ossification of the cranial sutures, but that the primary lesion is a mal-development of the brain, and that the bony changes are secondary. In spite of the apparent contradiction, Lannelongue thought that "although the primary defect may not be in the cranial bones, yet there is abundant evidence to show that the brain, in cases of microcephalus, is exposed to increased pressure, and therefore he conjectured that a relief of this pressure might act beneficially by allowing the stunted brain to develop with greater rapidity."[5]

In the case I have just reported the child, at one time, had a certain amount of intelligence; could say certain childish words; the fontanelles closed, and *post hoc* there was loss of speech and intelligence.

In a second case which has come under my observation the fontanelles were closed at birth, and the child has shown no mental development.

In six cases only have I been successful in finding particulars as to when the fontanelles closed, and the relation to this (in time) of the mental development or non-development.

In three cases, viz., McClintock's,[6] Keen's first[7] and my own first case, there had been a certain amount of development, which, when the fontanelles closed, was lost.

In Horsley's second case[5] the fontanelles were closed at birth, the child developed slightly mentally until near the end of the first year, but this progress was soon lost.

In three cases, viz., Keen's second[3] and third and my own second case, the fontanelles were found closed at birth, and there never was any mental development noticed.

Careful comparison of these cases forces one to the conclusion that cases of microcephalus must be divided into two groups, *congenital* and *acquired*. In the former, the condition is most probably one of agenesis, the synostosis being a mere concomitant of, or secondary to the cerebral defect. In this class of cases, logically, not much is to be hoped for from operative interference unless, perchance, as Starr has somewhat vaguely said, the increased space given the brain by the operation stimulates its growth and development.

In *acquired* microcephalus operative interference is highly logical. Here the brain has shown itself capable of development until the bones, for some reason or reasons, unite, and perhaps, as in my case, thicken, and not only prevent further development, but cause retrograde changes to take place, so that all the mental powers previously gained are now lost, and the child, from being more or less intelligent, becomes a drivelling idiot.

In a considerable number of cases of microcephalus which have been published, and quite notably so in my own first case, there has been marked tenderness over the occiput, and the posterior parts of the brain have been of a size out of all proportion to the anterior parts. These features I cannot throw any light upon.

What is the mortality after craniotomy? The following table shows it to be about 24.5 per cent.?

	No. of Operations.	No. of Deaths.
*Lannelongue - - - - - -	25	1
Keen - - - - - - - -	4	2
Parkill[12] - - - - - - -	1	0
Morrison[12] - - - - - - -	1	0
Gerster and Sachs - - - - -	1	1
McClintock[6] - - - - - - -	1	0
Horsley - - - - - - - -	2	1
Van Lennup - - - - - - -	2	1
Pengruchen[10] - - - - - - -	1	1
Lanphear' - - - - - - -	1	1
Maunoury[11] - - - - - - -	1	1
Trimble[13] - - - - - - -	1	0
Anger[11] - - - - - - - -	1	0
Heurtaux[11] - - - - - - -	1	1
†Hartley and Starr[11] - - - - -	1	0
Wyethe[9] - - - - - - -	4	2
Binnie - - - - - - - -	1	1
Total - - - - -	49	13

This mortality of 26.5 per cent. is high, but does it render the operation unjustifiable? I think not. While it is too early to pass judgment on the ultimate results, yet so far the gain obtained in many of the cases is exceedingly encouraging, and when we consider the utter hopelessness of any other known method of treatment, we are justified in running grave risks in our endeavors to raise these unhappy children from a state of hopeless idiocy.

CONCLUSIONS.

1. There are two forms of microcephalus—(a) congenital, and (b) acquired.
2. Craniotomy, while indicated in acquired microcephalus, will most probably be useless in congenital.

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*Some of these operations of Lannelongue's were performed for epilepsy, but most of them were for microcephalus.

†Trephining—opening being very large.

Dr. P. D. St. John, of Wichita, Kansas, read a paper entitled

ECTOPIC PREGNANCY WITH REPORT OF A CASE.

The patient, Mrs. E., 31 years of age, of German parentage but American born, has three children aged nine, four and two years. I was present at the birth of the last child, two years ago the ninth of last December. Her labors were all normal and easy. She had enjoyed good health, being regular in her habits, which were attended with very little pain.

On the first of October last I was called to see her, found her suffering pain in the pelvic region as of uterine colic or threatened miscarriage.

She stated that she had been flowing for two weeks, slightly but continuously. On examination I found the uterus pushed down low in the pelvis, tender and fixed, lying somewhat to the right with very little dilatation of the os. Her temperature was 102½°; pulse 110. Anodynes and antipyretics were given with viburnum.

I was called back October 3. Again I examined and gave it as my opinion that there would be a miscarriage and my treatment was directed to that end. However, the woman protested and was positive that she was not pregnant, although she admitted that she had been irregular as to her menstruation.

Her husband reported to me a few days later that his wife's condition had greatly improved. He, being a travelling man, started on the road for his house.

During the night of October 14 I was called again. By this time I was getting somewhat uneasy and puzzled in regard to the case. However, before examination, I obtained some additional history which gave me more light. The timidity of the patient had heretofore prevented her speaking freely. She now told me that she last menstruated regularly July 26, yet she was still positive that she was not pregnant, insisting that she did not feel as she had felt in former pregnancies. She said further that about September 23, while carrying a bucket of water she was taken with a severe pain in the left ovarian region as though something had torn loose.

This, I now think, was the time the pregnancy changed from tubal or ovarian to abdominal. At this date, October 14, eleven weeks had passed since the time of cessation of regular menstruation.

I found the woman suffering severely, with a temperature of 103½°, and pulse 114. Vaginal examination disclosed the same condition as ten days previously, only there was greater tenderness and greater rigidity of the organs.

Abdominal palpation showed a tumor in the left ovarian region which I could very distinctly outline as that of a fœtal body.

Fluctuation was distinct and by conjoined palpation of the ovum ballottement could be produced. I had examined it this way two weeks before, but did not detect this. The mists were now cleared from my mental vision and I was sure this was a case of extra-uterine pregnancy, the first case I had ever seen, but I was afraid this intelligence had come to me too late to save my patient. I blamed myself for being so slow in making the diagnosis.

While these symptoms are not so common in this form as in tubal pregnancy, yet the metrorrhagia, the intercurrent attacks of pain, the languor, the fainting, and the rapid pulse ought to have been sufficient aid and warning to have led me to a correct diagnosis sooner. But as this was my first case and my patient is well, I am sure your criticism on this point will be lenient.

The morning of the 15th I called to see the patient, and found temperature 103¾°; pulse 104. The 16th they were about the same. The husband came in on the morning of the 17th by my request, and I asked for consultation.

Dr. Fabrique was called, who confirmed the diagnosis of abdominal pregnancy. I had advised the use of electricity, which advice was concurred in by the consultant.

We used the McIntosh dry cell battery, the negative bulb electrode passed well up in the left cul-de-sac of the vagina, and the large moist electrode on the skin immediately over the tumor, beginning with an occasionally interrupted galvanic current of forty milliampères.

The electricity was applied each day, night and morning, after the first day, the 17th. The current was gradually increased up to 100 milliampères. The length of each sitting was ten minutes, and the number of sittings, fourteen, extending over eight days.

Having had no experience in such a case, I watched very closely each day the effect of the applications of the electricity current; could detect no change other than a gradual reduction of temperature and pulse till after the fourth day.

After the thirteenth or fourteenth application there was clear and positive evidence of suspended growth, such as an almost normal temperature and pulse.

The tumor was decreasing in size, less tender on pressure, and quite movable. I saw the patient again October 31. Her temperature and pulse were normal. The tumor was disappearing, and the patient able to sit up a little.

Dec. 1, I called again, the lady doing the work of the household. I could still feel a little lump where the tumor had been. I saw her again last Monday (March 14). She has regained her usual weight, enjoys as good health as she ever did, is regular as to her menstruation, and does all her own work.

OÖPHORECTOMY—CASES AND RESULTS.

Dr. J. H. Van Eman, of Kansas City, Missouri, read a paper on this subject.

At a recent meeting of the Eastern Gynecological Society a report of cases of laparotomy for the purpose of removing diseased ovaries and tubes was read. In this paper and at various times and in various medical journals of still more recent date, Dr. Ward, of Topeka, Kansas, lays claim to pioneer work in this line of surgery in the State of Kansas.

In all of the articles above referred to the claim is substantially made that for the purpose above mentioned but one laparotomy had been made in the State of Kansas prior to 1890.

To put on record past work in this line and to give the results, other than immediate recovery from the operation, is the object of this paper. Part of the cases mentioned in this paper have been more or less fully reported.

Case 1.—Mrs. R., aet. 36, first menstruated at eleven, and in her fright bathed herself in cold water. Result, arrest of menses, and great suffering during her periods ever afterward. Married at 20. Sterile. General and sexual health getting worse and worse from year to year. About 1874 began having during the menstrual period a strange trembling feeling in lower part of abdomen, followed soon by a rhythmic contraction of both psoas and iliacus internus muscles, flexing the thigh on the abdomen. For the first eighteen months this only occurred during her periods; later on, however, an action of the bowels, or trying to sweep the floor, would bring on an attack. If used in the very beginning, these nervous attacks could be controlled by a full dose of belladonna by the rectum. An attack when fully developed could only be controlled by full chloroform anæsthesia. Once, as an experiment, nothing was done and the attack lasted thirteen hours. Chronic uterine catarrh also existed continually.

After having exhausted all methods of treatment of which I had any knowledge, and with a full understanding on the part of the patient as to possible result, I, on the fifth day of February, 1880, removed both ovaries, but did not touch the tubes. The patient made a good recovery. Convalescence was prolonged by the twisted ends of the silver abdominal sutures breaking off during a hard vomiting spell soon after the operation. The wire was lost in the abdominal wall and later caused an abscess. One end came to the surface and was then easily removed, the abscess promptly healing. Neither the menses nor the "Jerks," as the patient called her attacks, ever appeared again. She is now living in Iowa, has become quite fleshy; does her own work and compared with her past is in good health. This so far as I have any knowledge, was the third oöphorectomy made west of the Mississippi river and the first one that recovered from the operation.

Case 2.—Miss——, of Wichita, Kansas, æt. about 22. Dysmenorrhœa since the age of fifteen. Has been compelled to abandon school, music and all steady employment of any kind, as she is confined to her bed and room fully two weeks out of every four, and is only fairly on her feet again before she is once more prortrated. At her menstrual period just previous to the operation, her physician informed me he used 3½ grains of morphine hypodermically in one night and scarcely seemed to moderate the pain. Removed both ovaries Dec. 18, 1884. She vomited everything for the first five days. Outside of this she did nicely. Two years after the operation she reported that her enjoyment of life began after the operation. She was looking remarkably well. The only thing that mars the completeness of her recovery is a disturbance of vision making steady use of the eyes painful. This, I believe, is caused by the long delay in operating. Had the operation been performed at a much earlier day her eyes would have been saved. Menstruation had not reappeared at the end of two years.

Case 3.—Mrs. O., æt about 30, of Marion, Kansas, married, two children, had a lacerated cervix which was operated upon by some one. Union only partial. Her pain and marked nervous disturbance during menstruation became worse rather than better. On the 18th day of October, 1886, I removed both tubes and ovaries. She had an uneventful convalescence, and I am told by a medical gentleman who recently saw her that she has fully regained her health. Her improvement, however, was very slow.

Case 4.—Mrs. H., of Marion Co., Kansas, æt. about 31, married, no children, says she has had a continuous flow for twelve years, quite profuse at her periods. Has a fleshy mass protruding from the cervix; this has been removed with the serrated spoon three times at least. It reappears again in a few months. Bimanual examination showed that the uterus rises almost to the umbilicus and to its left is a movable tumor the size of an orange. Operated October 18, 1886. Uterus evenly enlarged. No adhesions, right ovary healthy, left had degenerated into a single cyst the size of a large hen's egg. Removed both ovaries and tubes. Convalescence from operation rapid and uninterrupted. Flow still continued and became very offensive. About three months later after many severe expulsion pains a mass looking like dead flesh and smelling very badly was expelled, and the flow soon ceased. Six months after the operation she wrote me that she was as well as she ever was in her life and was able to do her own work. I have quite recently heard that her health continues good.

Case 5.—Mrs. R., æt 34, of Lebanon, Kansas, married 12 years, never pregnant. Has an enlargement of the abdomen of several years standing. Examination showed a central tumor reaching as high as the umbilicus and evidently the uterus itself, and in size that of a five months pregnancy. The cervical portion, while somewhat enlarged, was neither shortened nor softened. Menses had been regular but not profuse. Tumor gave pain and uneasiness by its size and pressure. An operation was advised for the purpose of arresting the growth of what was diagnosed as an *intramural fibroid.* Operation made September 1, 1888. No adhesions nor difficulty in getting at the growth. It was necessary, however, to enlarge the external wound in order to reach the ovaries, and it was found necessary to lift the uterus entirely out of the abdominal cavity, the enlargement being almost entirely at the expense of the superior portion of the uterus, i.e., above the ovarian ligaments, the ovaries being found far down on the side of the uterus. The uterus when brought out showed such a striking resemblance to one containing a five month's fœtus, that it was difficult to believe such was not the case. Owing to the conditions the uterus could have been removed with ease. As this contingency had not been anticipated, the operation agreed upon was carried out and both ovaries and tubes were removed. Vomiting was quite severe in this case and the first five days following the operation were pretty stormy, largely owing, in my judgment, to a failure to thoroughly clear out the alimentary canal previous to the operation. After free purgation there was no further trouble. One year later the patient returned for examination and advice. The menses had not reappeared. Her health was fair, excepting neurotic troubles in the shape of hot flashes and a general nervous condition such as women have at the climacteric period. The abdominal wall, thin in a very spare woman at the beginning, was now quite thin with a tendency to flatulent distension, which led her to fear that the tumor was getting larger. Bimanual examination showed the uterus very firm in consistency, low down in the pelvis, and of the size of a small goose egg. Thorough dilatation of the uterine canal, a somewhat difficult thing to do, showed the uterus empty, and the enlargement had been largely at the expense of the anterior superior wall.

Case 6.—Mrs. S., æt. 26, married eight years; one child, born a year after marriage; no other pregnancy. Health wretched since birth of child; nervous in every sense of the word; pains in uterus, back, ovarian region and down inside of thighs. Appetite, digestion and strength far below normal. Cervical leucorrhœa and dysuria, all symptoms aggravated during menstrual period. Bimanual examination showed a dilated, patulous os, with slight cervical laceration. Uterus low in the pelvis, but normal in size and not painful to touch. Ovarian tenderness on both sides; worst in left side. A diagnosis of cystic degeneration of ovaries was made, and their removal advised. Advice being accepted, the operation was made at the patient's home in Phillips county, Kansas, October 13, 1891. Operation done in the usual manner. Both ovaries a mass of cysts; the left ovary was the worst. Either from her long railroad trip to Kansas City and home again, or from the effect of the repeated examinations, the cyst occupying the whole distal end of the left ovary had been ruptured, and showed a dark, raw surface as large as a thumb-nail. Comparatively slight pressure forced out the contents of the tunica albuginea, such as a seed could be forced out of an overripe cherry. This patient's convalescence was uneventful, and when last heard from she was very cheerful and happy.

Such is a brief history of six Kansas cases upon which it has been my fortune to operate, and on account of which I claim the credit, if there be any, of doing pioneer work in that line of surgery, beginning it in 1880, twelve years since, and at a time when the methods of doing the operation were *sub judice.* A fact recalled to my mind since beginning this paper by reading over my notes of the operation made in 1880, in which I found I wrote at length my reasons for preferring the abdominal method to the vaginal one. I take pleasure, also, in adding that all of my Kansas cases recovered.

Dr. A. H. Cordier, of McPherson, Kansas, followed with a paper in which he reviewed the abdominal and pelvic surgical work of Dr. Joseph Price as he saw it in Philadelphia The speaker was very encomiastic in his remarks.

Dr. M. B. Ward, of Topeka, Kansas, in the discussion on Dr. Van Eman's paper, stated that, in the paper which he had read before the society mentioned by the essayist, he reported the facts as he knew them. He did not know that Dr. Van Eman was the first surgeon to perform oöphorectomy in Kansas; if he had known it, he should have given him credit therefor.

(*To be Continued.*)

Allegheny County Medical Society.

Scientific Meeting, February 16, 1892.

J. C. LANGE, M.D., PRESIDENT, IN THE CHAIR.

Dr. Kœnig read a paper entitled

A HISTORY OF A CASE OF DOUBLE PNEUMONIA ILLUSTRATIVE OF THE ABORTIVE TREATMENT.

The following case of pneumonia may perhaps be deemed worthy of recital before this society. I present it for your consideration and comment. Be the initial cause of pneumonia whatever it may, I am firmly convinced that the consolidation of the lungs is due to excessive efforts on the part of nature to repair the damage that has been done to the extraordinarily vascular lung-tissue, and to guide, or more properly, to restrain, the reparative forces, is the course that would seem to be indicated in the treatment of acute lobar pneumonia. In exemplification of this line of treatment of an acute pneumonia I submit the following history.

One week ago to-day at 8:30 o'clock in the morning I was called to see Mr. J. R., aged 37. The night previous, while conducting the calcium light arrangements in one of the theatres, he experienced acute shooting pains in his chest, but remained at work till the conclusion of the play. Shortly after arriving at his home, about one o'clock, he was attacked with a severe chill and suffered intense pain about the region of, and somewhat inferior to the left nipple. From that time till I saw him he suffered unremittingly, in spite of thorough application of mustard. His breathing was so difficult that the first glance was sufficient to locate the cause of his illness in his chest, and closer investigation revealed the following conditions: Pulse 108, temperature 102½°, face flushed, respiratory movements very painful and abrupt. Auscultation over the front of the chest revealed roughened respiratory murmur, but on account of the suffering of the patient the physical examination of the lungs was not very perfect. A rather profuse and extraordinarily well marked rusty expectoration, however, satisfied me as to the condition of the lungs when conjoined with the other superficial symptoms. The cough, by reason of the pain, was suppressed as much as possible. The first requisite to my mind was to relieve the pain, which was accomplished by a hypodermic injection of one-fourth grain of sulphate of morphine and one-one hundred and fiftieths of a grain of sulphate of atropine. The second indication to my mind was to divert the blood stream and reduce the heart's action. With this end in view I gave him a hypodermic tablet of hydrochlorate of apomorphine of the strength of one-tenth of a grain. This I gave dry on his tongue and it would, I hoped, nauseate him somewhat and initiate diaphoresis. I then wrote the following prescription:

℞. Tincturæ Veratri Viridis, gtt. L.
Sodii Salicylatis, ʒ iv.
Syrupi Senegæ, f ʒ iij.
Aquæ Menthæ Piperitæ q. s. ad f ℥ iij. ṁ.
Sig. A teaspoonful every 2 hours.

Being a man of vigorous health, weighing about 165 pounds, I considered two drops of the veratrum none too much, even conjoined with the ten grains of salicylate of sodium every two hours. The salicylate was added for the reason that some five or six years before I had attended the same patient through an attack of acute articular rheumatism, and thinking a similar influence might possibly be associated with his present illness it was added for both its anti-rheumatic as well as for its diaphoretic and heart sedative action.

The first dose of the prescription mentioned was given him about nine o'clock. At 3:15 P.M., he was bathed in perspiration, earning his life by the sweat of his brow, as it were; his pain was less severe, pulse 98, temperature 100°, and his cough was somewhat relieved. His expectoration was strongly tinged with a rusty color. During the time of my visit he became sick at stomach and vomited some grumous fluid, evidently the result of the apomorphine administered earlier in the day. At 10 P.M. his pulse was 88, temperature 99¼°, pain much relieved, face less flushed, but the perspiration was still profuse. I ordered the mustard to be reapplied.

Feb. 10, 10 A.M. Pulse 80, temperature 98¼°. Countenance almost normal in expression and color. Sputum somewhat less markedly tinged, cough slight, pain produced only on deep inspiration, slept well during the previous night, diaphoresis still profuse, urine highly colored and viscid. I ordered a solution of citrate of magnesium in wine-glassful doses to quench thirst and relax bowels. Thinking the severity of the attack overcome, the veratrum and salicylate were reduced to one-half the former dose.

Feb. 10, 6 P.M. Pulse 80, temperature 99½°, face a little more flushed, cough moderate, sputum rather more deeply colored. Full dose of the veratrum again resorted to. Diaphoresis less profuse.

Feb. 11, 9:30 A.M. Pulse 72, temperature 98½°, patient passed a comfortable night, slept considerable, cough slight, sputum still red but more faintly so, diaphoresis slight, face almost natural in color. During the past 48 hours the patient was so moist with sweat and was withal doing so well that it was thought best not to subject him to a physical examination of his chest. At this time, however, an examination was made and the base of the left lung, posteriorly, was found somewhat dull on percussion, and over an area of about the size of a hand distinct crepitant râles were heard; on the right side over a smaller area the same condition was discovered but the râles were more of a submucous variety. The fifty drops of tincture of veratrum viride and the half ounce of salicylate of sodium being exhausted, the prescription was ordered refilled and continued in slightly reduced doses. Another bottle of magnesium was also ordered.

Feb. 11, 6 P.M. At this time the patient was seen by Dr. Pettit, who found his temperature to be 100⅛°, and pulse 73. The crepitant râles on both sides were also noted by him. Diaphoresis and cough slight, pain almost absent. The pulse being reduced to about normal, he lengthened the interval between the doses of medicine to three hours.

Feb. 12, 10:30 P.M. Pulse 64, temperature 98°, patient rather pale, but feels well, expectoration still colored, cough less frequent, no pain, crepitant râles more moist, though still well marked. I discontinued the veratrum and salicylate, substituting for it the following prescription:

℞. Potassii Iodidi, ʒ i.
Syrupi Pruni Virginianæ
Aquæ Fœniculi aa, f ʒ iss. M̧.
Sig. A teaspoonful every three hours.

Feb. 12, 6 P.M. Pulse 72, temperature 98¼°. General condition excellent. Patient begins to desire food.

Feb. 13, 11:45 A.M. Pulse 60, temperature 98°, cough rather increased, but expectoration more scanty though still tinged with yellow, crepitant râles still recognizable on both sides, though more moist in character. The medication was reduced to one-half teaspoonful every four hours, and the patient was allowed to sit up part of the day.

Feb. 14, 5:30 P.M. Pulse 65, temperature 98¼°. The patient sat up all day. His appetite was good and he was without pain. His cough was almost voluntary, but at the base of the left lung slight mucous râles could still be heard. His expectoration was colorless, and his general condition, aside from the reduced pulse rate, normal.

In the absence of consolidation and bronchial breathing some may perhaps be inclined to doubt the genuineness of the pneumonia, but when we consider the powerful influence to which the patient was subjected prior to the time when those symptoms could have been developed, their absence is easily explained. The subnormal temperature and especially the subnormal pulse, after the cessation of the inflammatory process, might be considered analogous to the hypnotic, or even narcotic effect often seen after the passage of nephritic calculi where a powerful anodyne was administered, during the passage of the calculus, without, perhaps, entirely allaying the excruciating pain.

Discussion.

Dr. Rigg: I believe this is the proper treatment. It is the treatment that should be followed in pneumonia with very few exceptions. The selection, however, of the particular cardiac sedative is the choice of the practitioner. I prefer aconite, but I will leave that entirely with the individual physician. In the early stage of pneumonia stimulants have been recently recommended and recently condemned; I think they are injurious; they are contrary to the effect you want to produce. I have been following that treatment for the last thirteen years, and I have no reason to regret it, no reason to believe that any other treatment I have seen, and have at times taken part in, is any better.

Dr. Duff: I was very much impressed with this case which is certainly well worthy of remembrance. My observation teaches me to believe that salicylate of sodium is one of the best remedies of this kind. I wish to call attention to the fact that salicylate of sodium is one of the most efficacious remedies in my hands, and in the hands of several practitioners with whom I have spoken on this subject. There is a condition in pneumonia analogous to that we have in rheumatism, and the operation of the medicine is to a certain extent in the same line.

Dr. Thomas: I wish to corroborate what Dr. Duff has stated, that salicylate of sodium is possibly one of the best remedies in pneumonia. In the *Pittsburg Medical Journal* some years ago I gave the statistics of the continuance or the length of the disease, and the average limit of the disease as treated by salicylate of sodium. I look upon the disease as analogous in its character to rheumatism, and that both exist under a similar climatic condition, and that both require pretty much the one treatment. I do not remember what year my report was made, but if any of you wish to refer to it, you can get it in the journal published by Dr. Gallaher some years ago.

Dr. Daly: There can be no doubt that viewed as a great controller of the heart's action in inflammatory diseases, veratrum viride is a very useful remedy. I have used it more or less for twenty years, but it has always occurred to me that a more important point, or quite as important a point, is to know when to abate its administration. It is so potent a remedy that unless good judgment is observed in abatement of the dose, serious harm may be done with it. I have for many years been in the habit of instructing the nurse to count the pulse with the instruction that when the pulse fell to 95, with some moisture about the hands, to increase the interval of the dose and diminish its quantity to half or quarter of whatever had been given, and with instructions that if the febrile action increased to increase the dose again.

With reference to the value of salicylate of sodium in pneumonia, I think many can testify to its value, but I presume it is of value because of the common origin, frequently, of pneumonia and acute rheumatism. I think every man who has been an observer in the practice of medicine for fifteen or twenty years, or even less, will come to the conclusion that many acute pulmonary affections, such as bronchitis and pneumonia, have their origin within the system, not without the system at all, from the retention of broken down products. What we may regard as a rheumatic condition may in one case produce rheumatism and in another case pneumonia, in another case rheumatic bronchitis, or even a rheumatic pleurisy; that I have demonstrated to my own satisfaction more than once, and therefore it is reasonable that salicylate of sodium gives such results as it does. It will also reduce temperature and the heart's action, and for prompt and efficient work it is very difficult to find a remedy equal to it; but one must know when to stop the remedy.

Dr. Borland: I have used tincture of aconite with about the same results as Dr. Kœnig has had with veratrum viride. Salicylate of sodium, in my experience, has been satisfactory in many cases, but it is hard upon the stomach, and for this reason I have not been able to give full doses. What is called salicylate of sodium, that preparation that is made use of in filling prescriptions, is a preparation I understand made from coal tar products, or in other words, there is no true salicylate of sodium about it. Salicylic acid, which is made use of, is a synthetical product. I am in the habit of ordering the true salicylic acid and combining it with ordinary bicarbonate of sodium. I find that this combination is much more easily borne, and has better effects.

Dr. Davis: I would like to state that I have never been able in private practice to give salicylate of sodium longer than twenty-four or thirty-six hours. In hospital patients, where we can control them, we can prosecute the administration longer, but I do not know a patient who can resist and will not resist after forty-eight hours. It is so repulsive that the taste is a factor in starting a rebellion both in the stomach and palate of the patient.

Dr. Duff: Mr. Davis' remarks are certainly a revelation to me. As a rule, I have never experienced any trouble. I have had patients taking large doses, very large doses, of it for a week at a time without any bad results.

Dr. Batten: I have been in the habit of prescribing salicylate of sodium in rheumatism, and I have often continued it for two weeks, and I have never found any bad results from the taking of it, or any effect on the stomach, nor found that my patient objected to taking it. I have thought that salicylate of sodium was pleasant to take.

Dr. Kœnig, in closing the discussion, said: I desire to recall the attention of the society to a statement that I made, which has, judging from the discussion, apparently been overlooked; it is, namely: That the antiphlogistic action was initiated by apomorphine, one of the most powerful depressants and emetics in the entire pharmacopœia, and it probably had much to do with the abrupt termination of the pneumonia. I want also to express my appreciation of the danger that is associated with the administration of large doses of heart sedatives; for that reason I made three visits to this patient in one day. No doubt what Dr. Rigg and Dr. Borland stated, that many other remedies will accomplish the same result, is true. There are many roads that lead to Rome, though some may be more direct or otherwise preferable than others. Aconite or tartar emetic will accomplish the same result; but if I were to give aconite in sufficient amount to accomplish what the veratrum viride and salicylate of sodium did, I would want to sit at the bedside of the patient. I have no doubt it is an excellent remedy, more rapid in its action, and perhaps even more certain, but unless closely watched, we unnecessarily risk the life of the patient. In veratrum viride there are two or more alkaloids, one of which is powerfully heart sedative, while another is emetic, but less markedly so than the heart sedative one; before, however, the sedation can go to a fatal limit the emetic action is established and the stomach emptied of its remaining contents.

Dr. Roger Williams read the paper announced for the evening on

POST-PARTUM HÆMORRHAGE.

I merely desire to call your attention to a few notes on the subject of post-partum hæmorrhage, with a view of presenting a subject of interest to all engaged in the healing art, and calling to mind the conditions that eventuate in the great hæmorrhages following delivery. There is no time when action is more promptly required and knowledge and wisdom brought into play, than when, alone, one is brought into the presence of a post-partum hæmorrhage. It is unnecessary to present the picture, for one experience traces as with a stylus the tablets of memory more vividly and truly than ever artist's fingers wrought, and the whole play is necessarily so briefly enacted that we recall each incident, as we would describe a landscape seen in the lightning's flame. There is no emergency in the physician's life that gives less time for consultation and reflection, and no time more exacting to do the right thing, at the right time, and in the right way. Post-partum hæmorrhage is one of the most frequent complications of delivery. Call to mind, if you please, the many conditions you guard against in a labor about which you have doubt, and, in a vast majority, post-partum hæmorrhage is first to be feared. There is something more than intuition that places one on guard, for in the vast majority of subjects to this complication we find indisputable indices pointing to the subject in question. The patient, by reason of our wrongly-directed civilization and her whole surroundings, has engrafted a lax habit of body, inviting uterine inertia, and as a consequence, post-partum hæmorrhage. We find illustrations of this in the upper ranks of life for they are most prone by reason of the demands of society. Education plays a part also, in inducing a premature and unhealthy development; and in support of this, I call to mind a home, almost palatial in its furnishment and surroundings, where a subject of post-partum hæmorrhage resided, and the intellectual food for thought was furnished by Boccacio and the Queen of Navarre. Comment is unnecessary, for the young ladies of that home, so surrounded at a period of life when quiet is most essential, the reading of such books is but the sowing of dragon's teeth, with the harvest in anticipation.

Among the causes contributing may be mentioned the site and size of the placental attachment. A placenta attached to the fundus may have slight uterine attachment, and the uterine sinuses closed by nature's processes. Where the placenta is thin and covers a great surface, we may have ecstasis of the uterine vessels, and as a result, hæmorrhage. Local œdema, induced by perverted secretion and inflammation, may prevent contraction, and as a result, we have immediate hæmorrhage. Complication to the funis, where it is interfered with and shortened, may cause a too rapid placental displacement, and therefore profuse hæmorrhage even before the child is extruded from the maternal parts.

A few years ago I delivered Mrs. G.—a multipara—and the cord, beside being tied in a knot, was entwined around arm and neck, and during labor, the placenta was in part detached, causing a very great hæmorrhage. One peculiarity of this patient was her daily potation, which consisted of 16 ozs. of tincture of opium, which she obtained clandestinely, and managed to keep her vice secret, until her maid was invited into my office, and the liquid measured not only one time, but many.

Retained portions of placenta are a frequent cause of post-partum hæmorrhage. I call to mind a case that occurred in my practice during my residence in Philadelphia:

Mrs. S., four and one-half months in the family way, was pushed off the pavement by a swinging gate, and fell in a sitting position to the gutter. She promptly aborted, and as the placenta could not immediately be taken away, she suffered profuse hæmorrhage, which lasted until the placenta was expelled.

There may be a proliferation of the placental vessels, constituting an extra or supplementary lobe, and the retention of this, even after the placenta is removed, will cause profuse hæmorrhage. Plural births, with double placentæ; are not an unfrequent cause of post-partum hæmorrhage, for at times the uterus seems to be irresponsive to all our efforts, and a hæmorrhage beyond what we desired is the result. I call to mind a case in illustration:

Mrs. G. was delivered of twins, and the delayed second delivery was caused by an *inertia* induced by a beginning cancerous growth. The last delivered child was in part covered by a fleshy mass not unlike placenta, and was born dead.

Laceration of the cervix is a cause of post-partum hæmorrhage not unfrequently. At times the structures of the uterine neck are hard and brittle, as well as unyielding, and during labor are apt to suffer to a greater or less extent.

Mrs. W., a patient of mine, was delivered during my attendance at the American Medical Association at Nashville, and suffered an extensive laceration of the cervix which was the immediate cause of an extensive hæmorrhage, controlled by styptic injections and plugging.

Lacerations in the vulval canal are not unfrequently the cause of violent and prolonged hæmorrhage.

Mrs. D., a primipara, was delivered by me in December last, and there was a band of tissue broad as a common lead pencil joining the labia minora, which had escaped my examination, and when labor was completed, the torn end of this small impediment caused quite a hæmorrhage, which was with difficulty controlled by application of Monsell salt.

Growths within the uterus, even when too small to be detected during labor, are oftentimes the cause of alarming post-partum hæmorrhage. I saw a case of this character with Dr. McNeil, the history of which he has kindly furnished:

Mrs. K., a German, aged 38, confined December 16, labor lasting twenty-four hours. Antero-posterior diameter narrow; delivery with instruments, and nothing marked the labor out of the usual order, until the eleventh day, when violent hæmorrhage occurred, keeping up until the patient was almost exsanguinous. Prompt injections of hot water with vinegar, and teaspoonful doses of ergot, relieved the hæmorrhage, and expelled a small fibroid, which was the cause of hæmorrhage. All went well until January 3, when, during one of the quick atmospheric changes, the patient had a chill, rise of temperature, and died of pneumonic congestion January 5.

As post-partum hæmorrhage is generally a preventable trouble, and where it often follows in a physician's path, rendering such an one open to censure for neglect or want of knowledge, I claim your indulgence in this paper, which may appear too long and tiresome—and yet we all have interest in a subject of such vital importance, not only to friends and family, but to ourselves, and this is my only excuse.

The character of a contraction has much to do with post-partum hæmorrhage. Admit we have a perfect contraction immediately after labor; if it is not permanent and tonic, the relaxation may induce a fearful hæmorrhage. Post-partum hæmorrhage and permanent contraction are incompatible, I will admit, yet on examination one hour after labor, and finding the uterus soft and flabby, and where coagulæ have not formed in the uterine sinuses, hæmorrhage will surely result. Nature has her own way of controlling hæmorrhage by contractility of the uterus, and by plugging of the orifices of the uterine sinuses; and to assist by art when nature fails, is not an ignoble part the physician plays in attendance upon labor.

Not long ago, a physician left the bedside of a patient with violent post-partum hæmorrhage, with hurried directions to those who could not do what he should have done, in a fruitless quest for an instrument for transfusion. Had he gone for wings, that she might rise into the circumnambient clouds, he should have been less censurable, for when he returned life and hæmorrhage each had ended.

I need not speak of the secondary causes of hæmorrhage at great length, for that man who is not awake to the importance of the uterus worn out in a prolonged and exhausting effort in expelling the fœtus, or the uterus over-distended by excessive amounts of liquor amnii, or the consequences of a multiple birth, should not practice the obstetric art. Rapid emptying of the uterus—except when filled with clots as a consequence of uterine hæmorrhage—is baneful, jeopardizing and unskilful; and to do this to the over-distended uterus is criminal. The walls of an over-distended uterus are, to all intents and purposes, as paralyzed walls, and when the shock comes from relief of distension, it is the rule to expect retardation in contraction, and as a result, hæmorrhage of a greater or less extent.

The law is individual, and not collective; and every mother is subject to the law controlling her case. True, there are principles governing, and likewise it is true we should be interpreters of the same, and should be ready at the instant to assist the tired and waning energies of the one harrassed by the prolonged and exhausting pains of labor. But how many times is it true that we have hastened labor injudiciously, and reaped as the reward some complication that should not have existed.

The over-distended uterus should be relieved on the eve of labor by careful and minute rupture of the membranes, to allow the waters to slowly drain away. I know the ground taken is dangerous, but I am supposing judicious action, and there are examples of such action that have been praiseworthy to the operator, and to the one operated upon, helpful. I beg leave to cite an illustration:

Mrs. P., enormously distended, a sufferer from ever-present pain, sleepless, and in constant dread lest she should never arrive at the day of accouchement, was advised to have the sac of waters carefully ruptured. For two days there was a constant flow, and at the end of that time she went into labor, and was delivered of twins, one weighing 9½ lbs., and the other 8½. The uterus was firmly held for an hour to guard against hæmorrhage impending, and she made a rapid convalescence. An over-distended uterus is always a dangerous uterus, and should never be left until every indication is given that no emergency arises, especially as to hæmorrhage; for the greater number of deaths resulting from hæmorrhage during the last fifteen years in the Liberty Valley have been from this cause.

I am indebted to a brother practitioner for the following:

Mrs. W., aged 23, delivered in November, 1891. Labor normal, and of six hours' duration; uterus greatly distended by amniotic fluid; secundines removed without trouble. Four hours after labor, profuse hæmorrhage set in, leaving the uterus spongy and enlarged. Contractility of the uterus weak, and as the patient could not take ergot, the hæmorrhage was kept in abeyance by injections of hot water for three hours when it returned, with alarming conditions. Clots were speedily removed and warm water injected, controlling the hæmorrhage, but the patient was exsanguinous, weak and exhausted. Digitalis and stimulants were freely used, but the patient died on the tenth day, from complication referable to the lungs. There was not at any time septic trouble.

Irregular contraction is a cause of post-partum hæmorrhage not uncommon. Part of the muscular fibres are relaxed, whilst part are in a state of contraction, the former often over the placental site, and is the cause of considerable hæmorrhage. By palpation this condition is easily discerned.

Hour-glass contraction is also a cause of post-partum hæmorrhage; rare, it is true, yet nevertheless occurring. This condition follows often the obstetrician who, by efforts of traction, excites uterine contraction at the seat of irritation—often the placental attachment, and many times the internal os, and, as a cause, we have a diaphragm temporarily placed, with placenta in part or wholly included within the uterus, and hæmorrhage of a greater or less extent resulting. This condition rarely, if ever, follows after efforts of placental expression, and as this form of delivery of the after-birth grows into favor, hour-glass contraction grows less.

Encystment of the placenta is one of the rare complications of labor, and when it occurs, the placental site remains more or less paralyzed, whilst the remaining muscular fibres are in contractility. This form of trouble in the delivery of the after-birth is apt to be mistaken for adherent placenta, and oftentimes a part of it is left intra-uterine, as a result of wrongly directed effort, and hæmorrhage occurs, complicated at times by sepsis.

The placenta and membranes, and also the decidua, may be the seat of calcareous or fibroid degeneration, or the decidua may be abnormally thick. When an accident of this character to a part of the placenta or its membranes occurs, we have a cause of irritation not unlike a foreign body placed against the maternal tissues, and as a consequence, loosening of attachment in part, or an inflammation that causes adherent placenta. I think the many cases of adherent after-birth can be traced to one of the conditions mentioned; but, be this as it may, the hæmorrhage in this complication is not to be lightly considered, for the placental site is in a state of irritation, and its muscular fibres will respond freely.

Concealed hæmorrhage, following delivery, is a subject of interest to all. That fatal hæmorrhage of this character exists, many here will attest, and the obstetrician should ever be on guard. The flabby uterus rendered insensible, and worn out by long continued labor, may, by bleeding within itself, rob its subject of life. The external evidences of hæmorrhages may be normal, but where there is evidence of hæmorrhage, the practiced eye detects at once. The conditions leading up to this are referable to clots, and at times membranes acting as a valve within the internal os.

(*To be Continued.*)

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SATURDAY, APRIL 2, 1892.

A TRIUMPH FOR CONSERVATIVE GYNECOLOGY.

An apparent victory has recently been won in favor of conservatism in gynecic laparotomy. A trial lasting six weeks has just been concluded in one of our eastern cities, suit having been brought by an alleged woman's hospital against the local newspaper which "showed the thing up." The jury brought in a verdict for the defendant and the judge refused the plaintiff a new trial. This termination was a surprise, for the jury was out a long time, and a disagreement was rendered highly probable by reason of the protracted trial and antagonistic expert medical testimony. The local medical talent, almost without exception, was ranged against the conductors of the hospital, but the latter were enabled to import progressive surgical witnesses from other cities in sufficient force to make an ordinary lay-jury waver and disagree. This very importation of foreign experts may have been injurious to the prosecution, for they seemed to assume an air of superiority towards the "conservative" local witnesses, men well known and standing well in their own city. But probably the most injurious element in the testimony against the hospital—considered in the light of the feelings of the jury—was the sworn fact that an undertaker was in possession of a death certificate and was standing by the bedside of a patient, while she was yet alive, waiting with more or less patience for the dying woman to breathe her last. There was evidence also that little bottles of colored glycerine and water were sold for medicine at ten cents a bottle. These and some similar "bad breaks," we suspect did more to hurt the cause of the plaintiffs than whole volumes of cautiously phrased medical testimony by the most eminent "conservatives."

Since the close of the trial, a letter of congratulation, written by a gynecologist of national repute, was received by the editors of the prosecuted newspaper, adverting to their "glorious and far reaching triumph." The letter further says that "not the least of the many important and vital issues growing out of this celebrated case will be the encouragement and aid thereby given to conservative gynecologists in their efforts to stamp out the moral plague of laparotomania, and to render human spaying as a fine art unprofitable as well as unpopular."

We have our doubts, however, whether it is wise or expedient for members of the profession to seem to assent to be publicly designated as conservatives, and radicals or liberals, in surgery, no matter what may be its branch or specialty. This was done at the trial in question—witnesses permitted themselves to be badged under one or other antagonizing names; and seems to us only a little worse than for a regularly trained physician to submit to be styled "an allopath"—a nickname that is neither descriptive nor true. These pseudonyms are misleading to the public. An interviewer who waited upon Dr. A. J. C. Skene, the well-known teacher and author in this field, reports him as saying that the trial was one of unusual importance, and that the issue "has been one of the most notable in the history of medicine in this country. It has been most interesting because most elaborate and also upon a branch of the science not frequently in litigation. The majority of all cases upon which expert testimony is called are fractures and other injuries from accident. So a great deal of light was thrown upon a new field of jurisprudence in this trial. The verdict is of value to medical men right along this line. It is an object lesson for the over rash who are treading along the narrow edge of the law and it also points out the way more clearly for the too conservative. For it is as grave an error to delay an operation too long when it is necessary as to operate too early and too freely. Now these two classes upon both extremes of the profession know better how to interpret the laws, and it has shown how the law looks upon our work."

The magnitude and expensive nature of this trial may be inferred from a partial list of the statistics printed in the *Philadelphia Ledger*: "The trial consumed twenty-nine working days. The transcript of proceedings includes 5,000 type written pages, containing about 1,100,000 words, perhaps as much copy as there is in Shakespeare's plays. It has taken a force of three stenographers and as many type writers the whole six weeks to pile up this record, and they will receive between $2,500 and $3,000 for the transcript of it. The reports of the proceedings, in small, closely packed type, fill 120 pages of a large square scrap book, and it would probably take a man three days to read them through. There were 258 witnesses called, many of them being on the stand twice. But it is not only or chiefly in the mass of evidence submitted that this case is notable in the history of libel litigation in this country. The point which makes the trial unique is that the charges decided upon as libellous were 69,000 words long, longer than an ordinary novel. An alleged libel of that dimension is unheard of in legal history. The jury was out for thirty-seven hours."

EXAGGERATIONS REGARDING TRICHINOSIS.

Dr. Carl Frænkel, the eminent author and bacteriologist, has discussed in the *Deutsche Medicinische Wochenschrift*, December 17, the alleged dangers of American hams in the causation of trichinosis. In his opinion, there has been an unwarrantable amount of dread aroused in that direction. This corresponds with and confirms the view expressed some months ago that some of the trichinæ, found by German *experts in American hams, were a variety of political* trichinæ. And it might have been added they were there "for revenue only." Prince Bismarck did much to ruin the reputation of our worm-infested exports. Dr. Frænkel, however, in part repairs the damage. He alludes to an epidemic, described by Socke of Bremen, where trichinosis was produced in a dozen persons, in consequence of eating American smoked ham: all of these persons recovered. In another outbreak, at Düsseldorf, in 1881, sixteen persons suffered from the disease, and three died. His statistics appear to show that a larger number of cases is produced by foreign than by European ham, but he nevertheless declares his belief that the danger of eating trichinous meat has been much overstated. Rabbits were fed with infested ham without result. Recklinghausen also reported in Virchow's *Archiv* some feeding experiments with hams and bacon from America, and found the trichinæ dead. In the same journal, Kœhne stated that the feeding of rabbits and guinea-pigs with American ham has in no case produced positive results, but that a similar line of experiments with the German bacon induced trichinosis in the experimental animal. Other experiments of a negative character, as to the American product, are referred to. The author finds an explanation of these facts in the destruction of the parasite by a temperature of 60° to 70° F., and that the great danger is in eating the raw meat, such as the German people buy in the home markets. The trichinous American hams and bacon are less dangerous, for the processes of salting and smoking are likely to have killed many if not all of the trichinæ.

The *Boston Medical and Surgical Journal* recently referred to a case where trichinosis occurred on shipboard, said to have been due to American pork. There was a serious error in this case, too, it would appear so far as the source of the infecting meat was concerned. *A bark from Bremen was reported to have* had an outbreak of trichinosis at Iquiqui, Chili, from the consumption of barreled pork from the United States; and the inference was drawn by the German press that the policy of interdicting American pork was justified by the occurrence. The truth of the matter seems to be that the inculpated article was a fresh mess of pork, probably of Chilian production, and bought in the market at Iquique. The meat had not been pickled and some of it was eaten raw by the crew. Seventeen men partook of the article and all of them had trichinous symptoms. The incident simply reaffirms the position of Frænkel that the true danger is not so much from American pork as it is from hog's flesh that has not been thoroughly cooked.

THE CRUELTY OF FASHION IN "DOCKING."

No true lover of the faithful horse encourages the "docking" of that animal's tail. No genuine admirer of the graces of the horse will find that his beauty is enhanced. Long tails were the fashion a generation ago, and the longer and more flowing the appendage was, the greater was the admiration for it; but an Anglo-mania has reversed the style. This country has received some good specimens of horse-flesh from England, but that is no *reason why* the adoption of "docking" should be imported also. It should be remembered that *the climate and insect life* of England differ from our own. The superabundance of flies and mosquitoes here makes *the mutilation a* positive barbarity, and the farther south we go, the more cruel appears the practice. The *Lancet*, some years ago, led a crusade against the "bearing-rein," which was joined in by many medical journals and hundreds of physicians, and much good was done, and much unnecessary suffering was prevented. We would be glad to see the *chivalrous* attention of the profession given to the subject of "docking" and the sufferings of our voiceless equine servants. A writer in *The Independent* says that if an owner mutilates his horse's tail, "or buys them after they have been docked—which comes to the same thing—we would not so strongly condemn him, if his intention and custom were to keep the animal as long as he lived. But to dock a horse, in the heyday of his youth, thus depriving him of his tail forever, to keep only until he is old or broken down, and then to sell him for what he will bring, is the very refinement of cruelty." Let the voice of the sincere lover of the horse be heard far and near!

TREATMENT OF SMALL-POX IN WEST AFRICA.

Mr. Heli Chatelain, at present a consular officer of the United States in Portuguese West Africa, has been something of an explorer and philologist for that benighted region. He has also contributed to the American journals occasional observations *regarding the diseases of Angola and its "hinterland."* In one of his letters he describes the aboriginal management of variola. "*One day I came upon two* little children sitting on a mat in front of a hut; they were covered with pustules and smeared with some dirty-looking stuff. Their mother, by their side, was driving the flies off the poor little patients; it was a pitiful sight. Farther on I noticed other cases in various stages of the terrible scourge, the small-pox. When the pustules heal up, each one leaves its white mark, lasting a month or more, so that the convalescent looks very strange, with his body dotted all over with white spots. The natives of this district follow this plan of treatment: When the pustules are formed, they are opened with the sharp point of a strong grass-stalk; then the body is rubbed with water in which bruised tobacco leaves have been boiled; after which a layer of ashes, mixed with pounded kafoto leaves, is smeared over the body. When suppuration is over, the patient is smeared with a mixture of castor oil and ground lukula wood. The latter is red, and gives the painted patient a ghastly appearance."

SEXUAL PERVERSION.

This subject, naturally revolting, has been neglected by the profession, to a very great degree, but the increase in the number of crimes, directly traceable to its influence, which the public press is called upon to record, makes some attention to it almost imperative.

The Mitchell-Ward affair in Memphis has brought this matter in a most forcible light before the public. The suicide of Dr. Breedlove, whose perverted love for another man was unrequited, has also attracted much attention. Such cases of sexual perversion can be quite readily explained, and the laity can understand them, although it is difficult to show them that such cases are not necessarily the results of evil habits, voluntarily entered into, and willfully pursued.

If to these the famous case of "Jack the Ripper" be added, and a single category made to contain them, the generalization is too sweeping for the mind, unfamiliar with these matters, and untrained in their consideration, to, at once, grasp.

In the current number of the *Medical Mirror*, Dr. G. Frank Lydston reviews this subject. Among the instances which he mentions to show the unnatural means necessary to bring into play the sexual functions of certain individuals, is one of a man who carries with him a live chicken when he goes upon his semi-occasional debauches. This chicken is decapitated in the presence of the woman, and then and only then is he capable of performing his sexual functions.

Such an individual is clearly defective, mentally, functionally, if not anatomically. Fortunately in the particular phase of his perversion, no criminal element enters to obscure the judgment. In the case of Jack the Ripper, however, the awful crime of murder being present almost forces a harsh judgment and obscures the idea of an uncontrollable, perverted sexual feeling, as the impulse leading to the killing.

Lydston's classification of sexual perversion is as follows:

I Congenital and perhaps hereditary sexual perversion.	*a.* Sexual perversion without defect of structure of sexual organs. *b.* Sexual perversion with defect of general structure *e.g.*, hermaphroditism. *c.* Sexual perversion with obvious defect of cerebral development, *e.g.*, idiocy.
II Acquired Sexual Perversion.	*a.* Sexual perversion from pregnancy, the menopause, ovarian disease, hysteria, etc. *b.* Sexual perversion from acquired cerebral disease, with or without recognized insanity. *c.* Sexual perversion (?) from vice. *d.* Sexual perversion from overstimulation of the nerves of sexual sensibility, and the receptive sexual centers, incidental to sexual excesses, and masturbation.

The majority of sexual perverts should be regarded with pity rather than disgust; be treated as patients, rather than as outcasts and criminals. In concluding Lydston says: "The practical deduction of all that has been said, is that something of the physiology of the sexual functions should be taught to young persons, at least sufficient to enable them to keep off the rocks and shoals of perverted practices. If no other argument will suffice some good may be done by impressing them with the fact that any abnormal—or for that matter, normal impression—made upon the sexual function before the period of adult life has been reached, is liable to leave a permanent impression upon the sensitive nervous organization, as a consequence of which the normal receptivity and excitability of the sexual centers and nerves of sexual sensibility may be absolutely destroyed."

INTERNAL ANTISEPSIS.

It is generally admitted, that no matter how desirable, it is practically impossible to render the organism aseptic by means of internal antiseptics, or to make it, in this way, an unsuitable field for the growth of microörganisms. An observation by M. ALBERT ROBIN, supporting this view, was recently communicated to the Paris Académie de Médicine. A syphilitic woman about forty years of age, had been treated with corrosive sublimate for some time, until apparently thoroughly saturated with this substance. She developed broncho-pneumonia and died, and at the autopsy, staphylococci, streptococci, and other microbes were found in abundance, and growing readily, notwithstanding the mercurialization. This report unfortunately is very indefinite, and can not be criticised intelligently. ROBIN's standing, however, is a warrant that the observations were properly made. A French physician recently prescribed an aconite granule to a young girl suffering from neuralgia. A quarter of an hour after taking the pill she was dead. At the trial it was shown that the medicine had been prepared according to the directions given in the official "Codex," and BROUARDEL testified that the physician had followed his authorities and that the mistake lay in the Codex. Nevertheless, the medical man was condemned to pay a fine of 100 francs.

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Sec. 6. That to defray the expenses incurred in carrying out the provisions of this act the sum of —— dollars, or so much thereof as may be necessary, is hereby appropriated, to be disbursed, with the approval of the President, under the direction of the said secretary of the department. That this act shall take effect sixty days after its passage, within which time the medical secretary of public health shall be appointed.

Sec. 7. That an act entitled "An act to prevent the introduction of contagious and infective diseases into the United States and to establish a National Board of Health," approved March 3rd, 1879, and all other acts and parts of acts conflicting with the provisions of this act, are hereby repealed.

PRELIMINARY PROGRAM OF SECTION ON OBSTETRICS AND DISEASES OF WOMEN.

Interference in Delayed Labor, Geo. C. Mosher, Kansas City, Mo.

The Influence of Parturient Lesions of the Uterus and Vagina in the Causation of Puerperal Insanity, Geo. H. Rohe, Baltimore, Md.

The Importance of Surgical Treatment for Laceration of the Cervix Uteri, Augustus P. Clarke, Cambridge, Mass.

Asepsis and Antisepsis as Applied to the Practice of Obstetrics, W. W. Potter, Buffalo, N. Y.

Non-malignant Cystic Disease of the Peritoneum, C. A. L. Reed, Cincinnati, O.

Puerperal Hysteria, a Symptom of Puerperal Insanity, W. P. Manton, Detroit, Mich.

The Impairment of the Voice, in Female Singers, due to Diseased Sexual Organs, C. Henri Leonard, Detroit, Mich.

My Operative Experience in Pus Cases. By Title, I. S. Stone, Washington, D. C.

Non-malignant Cystic Disease of the Peritoneum, J. D. W. Ross, Toronto, Can.

The Development of Obstetrics, W. S. Stewart, Philadelphia, Pa.

The Abdominal Incision, and the Treatment in Laparotomy, W. H. Wathen, Louisville, Ky.

The Operative Treatment of Ventral Hernia resulting from Abdominal Surgery, D. Tod Gilliam, Columbus, O.

My Last 100 Consecutive Completed Abdominal Sections for Diseases of Ovaries or Ovaries and Tubes, R. S. Sutton, Pittsburg, Pa.

A Case of Puerperal Mania, Llewellyn Elliot, Washington, D. C.

Porro Operation, J. H. Carstens, Detroit, Mich.

Combined Gynecological Operations, G. M. Edebohls, New York.

Hysterectomy without pedicle, S. C. Gordon, Portland, Me.

Surgical and Electrical Treatment of Ectopic Gestation, W. E. B. Davis, Rome, Ga.

Diseased Uterine Appendages as Factors in Muscular and Joint Affections, M. B. Ward, Topeka, Kansas.

Persistent Sinuses Resulting from Abdominal Section, Andrew F. Currier, New York.

Vaginal Hysterectomy for Cancer of Uterus, Complicated with Pregnancy, A. Vander Veer, Albany, N. Y.

Procidentia Uteri and its Treatment, F. A. Glasgow, St. Louis, Mo.

Peritoneal Irrigation and Drainage, A. H. Cordier, McPherson, Kan.

Broad Ligament Pregnancy, W. W. Jaggard, Chicago, Ill.

The Essential Question of Drainage in Pelvic Surgery, L. S. McMurtry, Louisville, Ky.

Electricity vs. Surgery in Gynecology; A Charge to the Jury, Reeves Jackson, Chicago, Ill.

Accidental Puncture of the Uterus in removing a Fibro-Myoma following Dilatation, Edwin Ricketts, Cincinnati, O.

A Few Considerations on Ovariotomy when Pregnancy is present; a Case, W. H. Myers, Ft. Wayne, Ind.

Uterine Displacements, Chas. P. Noble, Philadelphia, Pa.

The Treatment of Posterior Rotation of the Occiput during Labor, Edward P. Davis, Philadelphia, Pa.

A Report of Experiments Germane to the Subject of Abdominal Supporters after Laparotomy, Robt. T. Morris, New York City.

A new Axis Traction Obstetrical Forceps, Wm. B. Dewees, Salina, Kan.

Report of Cases of Albuminuria of Pregnancy Treated by Chloroform Internally, John Milton Duff, Pittsburg, Pa.

Hysterical Mania as a Complication of Gynecological Cases, Ely Van de Warker, Syracuse, New York.

Colpo-perineorrhaphy, Edward W. Jenks, Detroit, Mich.

Delivery through the Abdominal Walls, in Otherwise Impossible Births, vs. Craniotomy, Geo. I. McKelway, Philadelphia, Pa.

Microörganisms in the Diseased Endometrium and Surgical Interference, Ernest Laplace, Philadelphia, Pa.

Intestinal Obstruction following Abdominal and Pelvic Operations, W. E. Ashton, Philadelphia, Pa.

Drainage in Abdominal Surgery, Donnel Hughes, Philadelphia, Pa.

The Relation of the Duration of Gestation to Legitimate Birth, T. Ridgway Barker, Philadelphia, Pa.

SELECTIONS.

Sulphate of Cinchonidine in the Treatment of Various Types of Malarial Poisoning.—In the *Bulletin Général de Thérapeutique* for December 30, 1891, there appears a paper upon the above subject, the author being Gemayel.

After detailing a number of cases in which he employed this alkaloid of cinchona in preference to quinine, he reaches the conclusion that cinchonidine is equal in rapidity of action and efficiency to quinine, if not superior to it, producing in all the cases to which he has given it brilliant results. He has found it particularly useful and advantageous in those fevers which have resisted quinine. Neither does he believe it to have the contraindications which often exist against the use of the older alkaloids. He orders one and a half drachms of sulphate of cinchonidine, divided into four powders, and that one of these shall be taken the first, second, fourth, and the sixth day. On the third and fifth day the treatment is suspended. In the course of the follow-ng week the same treatment is repeated. By this means ie endeavors to prevent a return of the disease, which, of ourse, is very important. The time which is best for the idministration of the drug is just before going to bed. In his way the inconvenience of buzzing in the ears or other lisagreeble symptoms, such as nausea, are escaped. How-ver, if the attacks are severe, it is well to give the cinchoni-line at other times. It is hardly necessary to add that irsenic, iron, and hydrotherapy are useful adjuncts to cin-honidine in the treatment of chronic malaria.—*Therapeutic Gazette.*

The Treatment of Gonorrhœa.—The morals of the sailors ire such that every naval surgeon on active duty has a fair-y rich experience in the treatment of gonorrhœa.

In the early stages of acute gonorrhœa of the anterior irethra, I have had satisfactory results from the following nethod of treatment: The patient is directed to close the neatus with his fingers, and then to try to pass water. As oon as the urethra is thoroughly distended, the fingers are removed, and the rush of urine thoroughly clears the canal. I then inject a solution of bichloride of mercury, 1 to 1,000, or 1 to 2,000, having it retained for a few minutes. The amount of pain caused determines the strength of solution to be used. This is repeated daily, or on alternate days, for a week. After the injection, the smarting should not continue more than an hour.

At night I use pure hot water, or medicate it with laudanum, two fluidrachms, or lead acetate, four grains to the ounce of water. If there be chordee, a very rare thing under this treatment, I direct the patient, before retiring, to immerse the penis in hot water for twenty minutes, and then administer a full dose of bromide and chloral, thirty grains of each. At the end of the week the bichloride is discontinued, and the medicated hot water used.

Should the case continue over a month, tender spots are searched for, the urethra is thoroughly dilated, and iodoform is applied to the surface, on alternate days.

If the posterior urethra be involved, ordinary injections seem useless. In the cases, after clearing the urethra, I pass a catheter behind the triangular ligament, and use weak solutions of bichloride, 1 to 4,000 or 1 to 5,000. I prefer to charge a soft catheter with iodoform and vaseline (ten grains to one ounce), pass the eye of the instrument behind the ligament, and then force out the iodoform by means of a piston. Sometimes zinc sulphate is substituted for the iodoform.

In all cases of gonorrhœa I carefully regulate the bowels, and direct the patient to drink water freely. His diet is restricted, especially as to meat, and he is obliged to spend much time in bed.

Internal medication has generally disappointed me, so that I rarely depend on it. I have never seen orchitis or cystitis follow these injections of bichloride, though such cases are reported.

The average duration of treatment is from four to six weeks. At the end of this time the patients are definitely cured. Of this I can be assured in many instances, since these patients remain under observation, when on a cruise, for months. Of course, some cases become chronic, but this is exceptional. The duration of treatment seems shorter, and the cure seems more permanent than is the case with patients treated expectantly and by internal medication.—Howard Wells, M.D., in *Therapeutic Gazette.*

On the Abuse of the Politzer Inflation in the Treatment of Ear-Disease.—Under this heading, Professor Buerkner, in the *Berl. Klin. Wochenshrift* of November 3, 1891, deals with the limitations of this most valuable and epoch-making measure, and reiterates the counter-indications to its use. So often has he seen harm result from its misuse, especially in lay hands, that he would restrict it to the suppurating cases and those with bilateral non-sclerotic catarrh, particularly among children. The tendency of the air to pass to the unobstructed side is dwelt upon, with its likelihood of unduly stretching the normal drum membrane, damaging the hearing and setting up a troublesome tinnitus in the ear previously normal, and this most probably when the employment has been left to lay hands, and when any gain in the diseased ear seems the more marked and encouraging by comparison with the deteriorating hearing of the other. The escape of compressed air into the stomach in some cases is also cited as an incidental disadvantage. When left in the patient's hands in the most appropriate case, the Politzer bag is almost sure to be passed on to others to whom it may prove disastrous. Buerkner has known this ready instrument to be vigorously employed for months, where inspection would have shown that the deafness was wholly due to cerumen or other trouble of the external meatus, not to speak of labyrinthine cases where it was slightly, and sclerotic ears in which it was seriously, harmful.

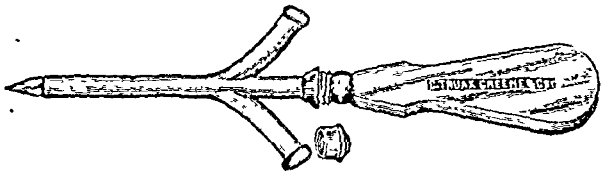
While there are certain safeguards possible in its use, and some sharing of its dangers by the preferred method of catheterization, the points, though not new, are well taken, and deserve careful consideration by all who employ the Politzer method.

NEW INSTRUMENTS.

TROCAR FOR AUTOMATIC WASHING OF THE PLEURAL CAVITY IN CASE OF EMPYEMA.

DEVISED BY DR. G. KRIEGER, LATE SURGEON AT THE UNIVERSITY OF WUERZBURG, DURING THE LAST FIVE YEARS.

Very frequently the treatment of empyema has been discussed, and although most of the leading surgeons are inclined to prefer a resection of a rib as the only radical cure to any other method it seems that quite a number of cases are curable without such a grave operation, especially in their earlier stages, by means of injections of antiseptic fluids and drainage of the pleura or by the tapping alone. However, this method was heretofore often unsuccessful, because besides the danger of admittance of air, a single injection is seldom sufficient to clean the pleural cavity perfectly and a daily repetition would be too troublesome for the patient. Both can be overcome by the underneath described apparatus.



A T-formed canula, the central tube of which bears a trocar, is armed with two rubber tubes. Each of them contains a conir valve so that an injected fluid may be allowed to pass only in one direction, that is, through the one tube to the central part of the canula, and from here down through the other tube. If the so-filled trocar is introduced into the pleura, the intra-pleural pressure will be sufficient to let out a certain quantity of pus, which will flow through the lower tube. When by the next inspiration a negative pressure is acting upon the cavity, an aspiration of any antiseptic fluid through the other tube will take place and fill the pleura until the next expiration commences. Then the aspirated fluid, together with pus, is driven again through the lower tube, and so on continually. By this way a washing of the pleura is obtained without any manipulation except the introduction of the trocar, which, as well as the tubes, may be attached to the skin by strips of adhesive plaster. To interrupt the aspiration of the fluid, it is only necessary to attach a tube compressor to the upper tube. At the same time the lower tube, remaining open, acts as an aspirator and draws gradually sufficient fluid down as to allow the walls of the cavity to approach to each other and to diminish the volume of the cavity. In order to prevent aspiration of air the upper tube must be filled with fluid before the trocar is introduced.

When no pus is discharged any more, the canula can be removed and the wound will soon be closed. The trocar was manufactured for me by Messrs. Chas. Truax, Greene & Co., Chicago.

NECROLOGY.

Dr. Lewis Henry Steiner, of Baltimore, died at his home in that city, on February 18, aged 65 years. He was born in Frederick, Maryland, and educated in arts at Marshall College, Mercersburg, graduating in 1846. Three years later, he was graduated in medicine at the University of Pennsylvania. His membership in the American Medical Association dates from 1852. At the time of his demise he was librarian of the Pratt Free Library, and for ten years past had given nearly all his time to literary pursuits. During the late war he served as chief inspector in the army of the Potomac for the United States Sanitary Commission. He interested himself in the establishment of schools for the benefit of the freedmen in his State, presiding for three years over the School Board of Frederick county. For twelve years he was member of his State Senate, the sole representative at times of the minority party. At different periods in the earlier years of his professional life, Dr. Steiner filled positions as lecturer or professor in the branches of chemistry and pharmacy in the Maryland College of Pharmacy, in the Columbian College, in the Maryland Institute, in the National Medical College and in the College of St. James, at Hagerstown. His address before the Medical and Chirurgical Faculty of Maryland in 1856 dealt with the relations of modern chemistry to the medical profession. In conjunction with Dr. Breed, he prepared an American edition of the Chemical Analysis of Heinrich Will. In 1861 he served as assistant editor of the *American Medical Monthly*. He was the librarian for several years of the Maryland Historical Society. In 1876, he was vice-president of the American Public Health Association, as well as public orator at the annual conventions at Philadelphia and Baltimore. In 1877, he was president of the American Academy of Medicine. He was a member of the International Medical Congress in Philadelphia. He belonged to numerous scientific and historical societies and was ever ready and helpful with his pen in their encouragement. This scholarly, fruitful and energetic life was terminated somewhat suddenly by a stroke of apoplexy.

MISCELLANY.

Sixth State Sanitary Convention of Pennsylvania, under the auspices of State Board of Health, at Erie, Pa., March 29, 30, and 31, 1892.

Morning Session, March 29.

1. Meeting of State Board of Health, at City Health Office, City Hall, at 8:30 a.m.
2. Sanitary Convention called to order at Mænnerchor Hall, 10 a.m. Hon. J. F. Downing, of Erie, President.
3. Prayer.
4. Music.
5. Address of Welcome, Hon. Chas. S. Clarke, Mayor of Erie, Pa.
6. Address, on Imperfections in the Law creating the State Board of Health of Pennsylvania, by Hon. J. Ross Thompson, of Erie.
7. Discussion.

Afternoon Session, March 29. Called to order at 2 p.m.

1. Prayer. Music.
2. Notes on Sanitary Condition and Necessities of Pittsburgh, Pa., by Crosby Gray, Chief Clerk Department of Public Safety, Pittsburgh, Pa.
3. Discussion on paper.
4. On Prophylaxis and Quarantine of Scarlet Fever, by E. Cranch, M.D., Erie, Pa.
5. Discussion.
6. Emergency Hospitals, by Prof. George G. Groff, M.D., Bucknell University, Lewisburg, Pa.
7. Discussion.
8. Report on Diphtheria Prevailing in Erie, Pa., during January, February, and March, 1892, and November and December, 1891, by A. A. Woods, M.D., Health Officer of Erie, Inspector Lake District.
9. Discussion.

Tuesday evening, March 29, supper at Mænnerchor Hall.

Morning Session, Wednesday, March 30, called to order at 9 a.m.

1. The Hygienic Care of Dairy Farms and Dairies, by Prof. George G. Groff, M.D., Bucknell University, Lewisburg, Pa.
2. Discussion.
3. Compulsory Domiciliary Quarantine against Diphtheria, by J. H. Montgomery, M.D., Erie, Pa.
4. Discussion.
5. Difficulties to Overcome, by S. S. Jones, Editor *Carbondale Leader*, and Secretary Board of Health, Carbondale, Pa.
6. Discussion.
7. Is Typhoid Fever a Rural Disease? by Daniel B. D. Beaver, M.D., Reading, Pa.
8. Discussion.
9. Queries by citizens present. Open to the general public. Any questions as to sanitary matters to be answered by members of State Board or Inspectors.

Afternoon Session, March 30. Called to order at 2 p.m. Prayer.

1. The Enforcement of Sanitary Laws, by Beriah E. Mossman, M.D., of Greenville, Pa.
2. Discussion.
3. Microscopic Examination of Water from Public Water Supply of Erie, Pa., with Remarks thereon, by David N. Dennis, M.D., Erie, Pa.
4. Discussion.
5. The Sanitary Utilization of Garbage and Refuse, and Destruction of Germ Life in Infected Material without Injury to the Article Treated, by J. M. Simonin, Civil Engineer, Philadelphia.
6. Discussion.
7. On the Sewer System of Erie, Pa., and the Indispensable Improvements Needed Therein, by George E. Platt, City Engineer, Erie, Pa.
8. Discussion. Music.

Evening Session, March 30. Lecture 7:30 p.m. Annual Address.

1. The Economic Value of Sanitation, by Peter H. Brice, M.D., of Toronto, member of the Provincial Board of Health of Ontario.
2. Organization of the Medical Society of Northwestern Pennsylvania.

Thursday, March 31. Inspection of Erie, Pa., by State Board of Health and District Inspectors, to leave City Hall at 8 o'clock a.m.

Morning Session, called to order at 11 a.m.

1. Paper by Wm. B. Atkinson, of Philadelphia, Inspector State Board of Health.
2. Discussion.
3. Typhoid Fever Caused by Impure Milk Supply, by L. Taylor, Medical Inspector for the Wyoming District.
4. Discussion.
5. Closing Proceedings. Answering of queries given by citizens, etc.

Adjournment at 1:30 p.m., Thursday, March 31, 1892.

The Kansas State Medical Society meets at Fort Scott, Kas., Wednesday and Thursday, May 4th and 5th. An excellent program has been prepared.

Tennessee State Medical Society.—The next meeting of the Tennessee State Medical Society will be held the 12th, 13th and 14th of April, 1892, in the Federal Court Room, U.S. Custom House, Knoxville, Tenn. The society will be called to order by the president, Dr. J. W. Penn, Humboldt, at 10 o'clock A.M., on the 12th.

The following is a list of the papers promised for this meeting:

"Science of Life"—President's Address—by J. W. Penn, M.D., Humboldt.

"Eye Affections in General Diseases," by J. L. Minor, M.D., Memphis. To open discussion—N. C. Steele, M.D., Chattanooga; A. G. Sinclair, M.D., Memphis.

"Typho-Malarial Fever" (so called), by W. B. Young, M.D., Bon Air Coal Mines. To open discussion—J. W. Carmichael, M.D., Knoxville; J. P. C. Walker, M.D., Dyersburg.

"The Corset," by Geo. R. West, M.D., Chattanooga. To open discussion—C. E. Ristine, M.D., Knoxville; Richard Douglas, M.D., Nashville.

"A Plea for Early Operative Interference in Ovarian Tumors," by J. H. Blanks, M.D., Nashville. To open discussion—A. W. Boyd, M.D., Chattanooga; Chas. M. Drake, M.D., Knoxville.

"Gall-Stones—Cholecystotomy—Removal of 52 Stones," by W. B. Rogers, M.D., Memphis. To open discussion—G. A. Baxter, M.D., Chattanooga; C. S. Briggs, M.D., Nashville.

"Epilepsy," by Michael Campbell, M.D., Knoxville. To open discussion—J. B. Cowan, M.D., Tullahoma; Thos. M. Woodson, M.D., Gallatin.

"The Use of the Curette in the Puerperal Uterus," by H. Berlin, M.D., Chattanooga. To open discussion—W. G. Bogart, M.D., Chattanooga; J. A. Witherspoon, M.D., Columbia.

"Report State Board Medical Examiners," by T. J. Happel, M.D., Sec'y and Treas., Trenton. To open discussion—J. Berrien Lindsley, M.D., Nashville; C. Deadrick, M.D., Knoxville.

"Alcohol and its Therapeutic Applications," by H. C. Brooke, M.D., Knoxville. To open discussion—W. M. Vertrees, M.D., Nashville; H. L. McReynolds, M.D., Chattanooga.

"Management of Stricture of the Deep Urethra," by W. B. Rogers, M.D., Memphis. To open discussion—Paul F. Eve, M.D., Nashville; B. P. Key, M.D., Chattanooga.

"Therapeutics, Present and Prospective," by C. W. Beaumont, M.D., Clarksville. To open discussion—G. W. Drake, M.D., Chattanooga; L. Jones Price, M.D., Knoxville.

"Glossitis," by J. L. Jones, M.D., Bell's Depot. To open discussion—W. K. Vance, M.D., Bristol; G. D. Butler, M.D., Pulaski.

"Lime Salts in Acute Dysentery," by T. H. Marable, M.D., Clarksville. To open discussion—J. A. Crook, M.D., Jackson, Geo. S. Glenn, M.D., Nashville.

"Moluscum—Fibrosum," by E. A. Cobleigh, M.D., Chattanooga. To open discussion—J. R. Buist, M.D., Nashville; J. B. F. Dice, M.D., Morristown.

"Influenza," by S. B. Fowler, M.D., Gainesboro. To open discussion—D. E. Shields, M.D., Morristown; N. T. Dulaney, M.D., Bristol.

"Some Recent Experiences with Puerperal Septicæmia, with Remarks," by W. D. Haggard, M.D., Nashville. To open discussion—J. R. Rathmell, M.D., Chattanooga; George S. Glenn, M.D., Nashville.

"Morphineism in its Relation to the Sexual Organs and the Appetite, and its Effect on the Offspring of the User," by T. J. Happel, M.D., Trenton. To open discussion—J. F. Grant, M.D., Pulaski; S. T. Hardison, M.D., Lewisburg.

"Tonics, Their Uses and Abuses," by W. F. Rochelle, M.D. To open discussion—Deering R. Roberts, M.D., Nashville; A. D. Scruggs, M.D., Knoxville.

"Impotence in the Male," by W. Frank Glenn, M.D., Nashville. To open discussion—Wm. K. Sheddan, M.D., Williamsport; J. N. Stout, M.D., Limestone.

"Imparative Conceptions in Insanity," by F. L. Sim, M.D., Memphis. To open discussion—Michael Campbell, M.D., Knoxville; Ambrose Morrison, M.D., Nashville.

———, C. Holtzclaw, M.D., Chattanooga.

"The Local Use of Phenacetine, with Report of Cases," by M. H. Lee, M.D., Knoxville. To open discussion—Landon A. Yarbrough, M.D., Covington; A. J. Swaney, M.D., Gallatin.

"A Case of Perineal Abscess in the Male," by W. F. Rochelle, M.D., Jackson. To open discussion—H. M. Anderson, M.D., Sewanee; J. F. F. Arnold, M.D., Limestone.

"Gastric Ulcer," by S. W. Sanford, M.D., Union City. To open discussion—G. M. Bazemore, M.D., Cleveland; W. C. Bilbro, M.D., Murfreesboro.

"Glaucoma," by J. A. Green, M.D., Dyersburg. To open discussion—F. T. Smith, M.D., Chattanooga; T. E. Edwards, M.D., Memphis.

"The Perineum in Labor," by Chas. P. McNabb, M.D., Knoxville. To open discussion—R. T. Bush, M.D., Gallatin; R. B. Maury, M.D., Memphis.

"Recent Progress in the Treatment of Tuberculosis," by W. C. Bailey, M.D., Knoxville. To open discussion—J. D. Plunket, M.D., Nashville; T. E. Prewitt, M.D., Grand Junction.

"Intestinal Obstruction," by J. B. Murfree, M.D., Murfreesboro. To open discussion—T. L. Maddin, M.D., Nashville; D. D. Saunders, M.D., Memphis.

"Report of Case," Duncan Eve, M.D., Nashville.

"Endometritis—Its Symptomatology and Treatment," by G. B. Gillespie, M.D., Covington. To open discussion—S. H. Toy, M.D., Johnson City; B. S. Wert, M.D., Chattanooga.

"Cholelithiasis," by B. D. Bosworth, M.D., Knoxville. To open discussion—L. M. Woodson, M.D., Gallatin; B. F. Young, M.D., Knoxville.

"Acute Articular Rheumatism," by D. H. Williams, M.D., Knoxville. To open discussion—W. T. Hope, M.D., Chattanooga; E. B. Wise, M.D., Chattanooga.

Other papers, the titles of which I have not yet learned, have been promised. Reports of interesting cases and voluntary papers will be in order. Any other information concerning the meeting that may be desired, will be given upon application to this office. Yours most truly,

D. E. Nelson, Secretary.

The second annual meeting of the Association of Military Surgeons of the National Guard of the United States, will be held in St. Louis, Mo., April 19, 20, and 21, 1892.

The railroads have granted one and a third rates. Papers will be read and discussed by regular Army and Navy, and National Guard Medical Officers.

For any information as to meeting, etc., address, Col. E. Chancellor, 515 Olive St., St. Louis, Mo. Surg. Gen. N. Senn, W. N. G., Pres.; Lieut. and Asst. Surg. Ralph Chandler, Corresponding Secretary.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending March 26, 1892.

Medical Inspector A. A. Hoehling, ordered as President Naval Examining Board.

Surgeon J. L. Neilson, ordered as member and recorder of Naval Examining Board.

Medical Inspector T. C. Walton, granted six months' extension of leave, with permission to remain abroad.

Charles Perry Bagg, of Los Angeles, Cal., commissioned an Asst. Surgeon in the Navy.

National and State Medical Societies of America.

AMERICAN MEDICAL ASSOCIATION.

Annual meeting at Detroit, Mich., June 7.

W. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa. Henry O. Marcy, M.D., Prest., Boston, Mass

American Association of Andrology and Syphilology.—Annual meeting at Richfield Springs, N. Y., June 20. J. A. Fonlyce, M.D., Sec., 60 Park Ave., New York City; A. T. Cabot, M.D., Prest., 3 Marlborough St., Boston, Mass.

American Association of Obstetricians and Gynecologists.—Annual meeting at St. Louis, Mo., September 20. William Warren Porter, M.D., Sec., Buffalo, N. Y.; Albert VanderVeer, M.D., Prest., Albany, N. Y.

American Academy of Medicine.—Annual meeting at Detroit, Mich., June 4. Charles McIntire, M.D., Sec., Easton, Pa.; Phineas S. Conner, M.D., Prest., Cincinnati, O.

Association of American Physicians.—Annual meeting at Washington, D. C., May 24. Henry Mun, M. D. Sec., 33 Elk St., Albany, N. Y.; Henry M. Lyman, M.D., Prest., 65 Randolph St., Chicago, Ill.

American Dermatological Association.—Annual meeting at Cushing's Island, Portland Harbor, Me., September 13. George Thomas Jackson, M.D., Sec., 14 E. 31st St., New York City; E. B. Bronson, M.D., Prest., 123 West 34th St., New York City.

American Gynecological Society.—Annual meeting at Brooklyn, N. Y., September 20. Henry M. Coe, M.D., Sec., 27 E. 64th St., New York, N. Y.; John Byrne, M.D., Prest., Brooklyn, N. Y.

American Laryngological Association.—Annual meeting at Boston, Mass., May ——. Chas. H. Knight, M.D., Sec., 20 West 31st St., New York City; S. W. Langmaid, M.D., Prest., Boston, Mass.

American Ophthalmological Society.—Annual meeting at New London, Conn., July 20. S. B. St. John, M.D., Sec., 43 Pratt St., Hartford, Conn.; Hasket Derby, M.D., Prest., Boston, Mass.

The American Orthopedic Association.—Annual meeting at New York, September 20. John Ridlors, M.D., Sec., 337 West 57th St., New York, N. Y.; Benj. Lee, M.D., Prest., 1532 Pine St., Philadelphia, Pa.

The Medico-Legal Society.—Annual meeting, New York. Clark Bell, Esq., Sec., New York, N. Y.; Hon. H. M. Somerville, Prest., New York, N. Y.

National Association of Railway Surgeons.—Annual meeting at Washington, D. C. E. R. Lewis, M.D., Sec., Kansas City, Mo.; J. H. Murphy, M.D., Prest., St. Paul, Minn.

Ohio Valley Medical Society.—Annual meeting at ——. Wm. S. Hoy, M.D., Sec., Wellston, Ohio; Ed. H. Fravel, M.D., *Prest., Poca*, W. Va.

STATE.

Medical Association of the State of Alabama.—Annual meeting at Mongomery, April 12. Thomas Alexander Means, M.D., Sec., Mongomery, Ala.; Benjamin James Baldwin, Prest., Montgomery, Ala.

State Medical Society of Arkansas.—Annual meeting at Little Rock, June 2. L. P. Gibson, M.D., Sec., Little Rock, Ark.; J. S. Shibley, M.D., Prest., Paris, Ark.

Connecticut Medical Society.—Annual meeting at New Haven, May 24. N. E. Wordin, M.D., Sec., 174 Fairfield Ave., Bridgeport, Conn.; C. A. Lindsley, M.D., Prest., Bridgeport, Conn.

The Medical Society of the State of California.—Annual meeting at San Francisco, April 19. Wm. Walter Kerr, M.D., Sec., 600 Sutter St., San Francisco, Cal.; O. O. Burges, M.D., Prest., 329 Geary St., San *Francisco, Cal.*

Colorado State Medical Society.—Annual meeting at Denver, June 21. H. M. McLaughlin, M.D., Cor. Sec., Denver, Col.; Wm. M. Strickler, M.D., Prest., *Colorado Springs*, Col.

Florida State Medical Society.—Annual meeting at Key West, April 5. J. Harris Pierpont, M.D., Prest., Jacksonville, Fla.; J. D. Fernandiz, M.D., Sec., Jacksonville, Fla.

The Medical Association of Georgia.—Annual meeting at Columbus, April 20. G. W. Mulligan, M.D., Prest., Washington, Ga.; Dan H. Howell, M. D., Sec., Atlanta, Ga.

Illinois State Medical Society.—Annual meeting at Vandalia, May 17. David W. Graham, M.D., Sec., 133 Clark St., Chicago, Ill.; Chas. C. Hunt, M.D., Prest., Dixon, Ill.

Indiana State Medical Society.—Annual meeting at Indianapolis, May 12. E. S. Elder, M.D., Sec., 44 E. Ohio St., Indianapolis, Ind.; Edward Walker, M.D., Prest., Evansville, Ind.

Iowa State Medical Society.—Annual meeting at Des Moines, May 18. C. F. Darnall, M.D., Sec., West Union, Ia.; G. F. Jenkins, M.D., Prest., Keokuk, Ia.

State Medical Society of Kansas.—Annual meeting at Fort Scott, May 3. W. S. Lindsay, M.D., Sec., Topeka, Kan.; J. E. Oldham, M.D., Prest., Wichita, Kan.

Kentucky State Medical Society.—Annual meeting at Louisville, May 1. Steele Bailey, M.D., Sec., Stanford, Ky.; H. Brown, M.D., Prest., Hustonville, Ky.

The Louisiana State Medical Society.—Annual meeting at New Orleans, April 27. P. B. McCutchon, M.D., Sec., New Orleans, La.; J. B. Elliott, Prest., New Orleans, La.

Maine Medical Associatiom.—Annual meeting at Portland, June 8. Chas. D. Smith, M.D., Sec., 126 Free St., Portland, Me.; Edwin M. Fuller, M.D., Prest., Bath, Me.

Medical and Chirurgical Faculty of Maryland.—Annual meeting at Baltimore, April 26. Joseph T. Smith, M.D., Cor. Sec., 1010 Madison Ave., Baltimore, Md.; W. H. Welch, M.D., Prest., Johns Hopkins Hospital, Baltimore, Md.

Massachusetts Medical Society.—Annual meeting at Boston, June 7. F. W. Goss, M.D. Sec., Roxbury, Mass.; A. H. Johnson, M.D., Prest., Salem, Mass.

Michigan State Medical Society.—Annual meeting at Flint, May 5. Charles W. Hitchcock, M.D., Sec., Detroit, Mich.; George E. Ranney, M.D., Prest., Detroit, Mich.

Minnesota State Medical Society.—Annual meeting at St. Paul, June 15. Chas. B. Whitherle, M.D., Sec., Endicott Arcade Bldg., St. Paul, Minn.; Park Ritchie, M.D., Prest., St. Paul, Minn.

Medical Association of Missouri.—Annual meeting at Pertle Springs, Johnson Co., May 17. L. A. Berger, M.D., Rec. Sec., Kansas *City*, Mo.; T. F. Prewitt, M.D., Prest., St. Louis, Mo.

Medical Association of Montana.—Annual meeting at Butte, April 20. G. H. Barbour, M.D., Cor. Sec., Helena, Mont.; J. H. Owings, M.D., Prest., Deer Lodge, Mont.

New Hampshire Medical Society.—Annual meeting at Concord, June 20. G. P. Conn, M.D., Sec., Concord, N. H.; M. W. Russell, M.D., Prest., Concord, N. H.

New York State Medical Association.—Annual meeting at New York, November 15. E. D. Ferguson, M.D., Sec., Troy, N. Y.; J. B. Andrews, M.D., Prest., Buffalo State Hospital, Buffalo, N. Y.

The Medical Society of the State of New York.—Annual meeting at Albany, Feb. 7, 1893. F. C. Curtis, M.D., Sec., 17 Washington Ave., Albany, N. Y.; A. Walter Suiter, M.D., Prest., cor. Court and Main Sts., Herkimer, N. Y.

Medical Society of New Jersey.—Annual meeting at Atlantic City, June 28. W. Elmer, M.D., Cor. Sec., Trenton, N. J.; E. J. Marsh, M.D., Prest., Paterson, N. J.

Nebraska State Medical Society.—Annual meeting at Omaha, May 10. L. A. Merriam, M.D., Cor. Sec., 15th and Furman Sts., Omaha, Neb.; Charles Inches, M.D., Prest., Scribner, Neb.

Medical Society of the State of North Carolina.—Annual meeting at Wilmington, May 24. J. M. Hays, M.D., Sec., Oxford, N. C.; Wm. T. Cheatham, M.D., Prest., Wilmington, N. C.

The Ohio State Medical Society.—Annual meeting at Cincinnati, May 3. T. V. Fitzpatrick, M.D., Sec., Cincinnati, O.; G. A. Collamore, M.D., Prest., Toledo. O.

Oregon State Medical Society.—Annual meeting at Portland, June 2. F. Cauthorn, M.D., Prest., Portland, Ore.; C. H. Wheeler, M.D., *Sec., Portland*, Ore.

The State Medical Society of Pennsylvania.—Annual meeting at Harrisburg, May 17. Samuel L. Kurtz, M.D., Prest., Reading, Pa.; Wm. B. Atkinson, M.D., Sec., 1400 Pine St., Philadelphia, Pa.

Rhode Island Medical Society.—Annual meeting at Providence, June 2. William H. Palmer, M.D., Prest., Providence, R. I.; George D. Hersey, M.D., Cor. Sec., Providence, R. I.

South Dakota Medical Society.—Annual meeting at Salem, June 8. M. Ware, M.D., Prest., Salem, So. Dak.; W. C. Warne, M.D., Sec., Mitchell, So. Dak.

South Carolina Medical Association.—Annual meeting at Georgetown, April 28. J. R. Bratton, M.D., Prest., Yorkville, S. C.; Mozyck Ranluel, M.D., Cor. Sec., 103 Wood St., Charleston, S. C.

Tennessee State Medical Society.—Annual meeting at Knoxville, April 12. J. W. Pierce, M.D., Prest., Humboldt, Tenn.; D. E. Nelson, M.D., Sec., Chattanooga, Tenn.

The Texas State Medical Association.—Annual meeting at Tyler, April 26. W. H. Wilkes, M.D., Prest., Waco, Texas; H. A. West, M.D., Sec., Galveston, Texas.

Vermont State Medical Society.—Annual meeting at Montpelier, October 14. C. S. Caverly, M.D., Prest., Rutland, Vt.; D. C. Hawley, M.D., Sec., Burlington, Vt.

Medical Society of Virginia.—Annual meeting at Luray, October 1. H. Grey Latham, M.D., Prest., Lynchburg, Va.; J. F. Winn, M.D., Cor. Sec., 714 E. Franklin St., Richmond, Va.

The Medical Society of the State of Washington.—Annual meeting at North Yakima, May. H. C. Wilson, M.D., Prest., Port Townsend, Wash.; Geo. S. Armstrong, M.D., Sec., Olympia, Wash.

Medical Society of West Virginia.—Annual meeting at Clarksburg, West Virginia, in May, 1892. C. Shriver, M.D., Prest., Bethany, West Virginia; D. Mayer, M.D., Secretary, *Charleston, West Virginia.*

The Wisconsin State Medical Socity.—Annual meeting at Milwaukee, May 4. George F. Witter, M.D., Prest., Grand Rapids, Wis.; Charles S. Sheldon, M.D., Cor. Sec., Madison. Wis.

The Journal of the

American Medical Association

Vol. XVIII. CHICAGO, APRIL 9, 1892. No. 15.

ORIGINAL ARTICLES.

TOILET AND MEDICINAL SOAPS.

BY JOHN V. SHOEMAKER, A.M., M.D.,
OF PHILADELPHIA.

The skin may be briefly described as a dense layer, consisting chiefly of white fibrous tissue, with which are intermingled yellow elastic and unstriped muscular fibres. It is abundantly supplied with blood-vessels, lymphatics and nerves. Its outer surface is thrown up into little elevations, called papillæ, in which are lodged the tactile corpuscles. Sebaceous and sudoriparous glands are embedded in its substance, while its exterior is protected by an epithelial covering divisible into four strata. The epithelial cells constituting the superficial layer are hard and dry, from loss of water and conversion of albumin into keratin. The cuticular appendages, hair and nails, are merely modifications of the epithelium.

The epithelial sheath, known as the cuticle or epidermis, is destitute of blood-vessels or nerves, and nourished solely by imbibition. The cells dry, harden and flatten as they approach the surface, and are continually being shed as they lose their vitality. The hair and nails, as the limit of their growth is reached, require trimming.

The integument as a whole, including the epiderm, protects the soft parts which it covers. The office of the epiderm is to shield the more delicate derm from mechanical and chemical irritants.

The functions of the true skin are varied and important. The sebaceous glands, situated in the substance of the skin, open, as a rule, into the hair follicles, and lubricate the hair-shaft as it is gradually extruded. At the same time a cholesterine fat is formed within the cornified cells of the hair, nails, and most superficial layer of the epidermis. These fats render the skin soft and pliable, protect those portions which are exposed to atmospheric vicissitudes, and preserve the dessicated cells from cracking and exposing the softer cutis vera. They lessen friction and prevent maceration upon prolonged exposure to moisture. Perspiration is an excretory fluid, contains a small proportion of urea, and is of importance as a medium of elimination. A higher function performed by this fluid is the regulation of the temperature of the body. The skin is also a respiratory organ, absorbing oxygen and giving off carbonic acid. The general covering of the body, therefore, affords a certain degree of assistance to the work of the kidneys and lungs.

The dry cells of the epiderm prevent the too rapid evaporation of water from the succulent tissues beneath, a loss which would be incompatible with their vitality. Finally, the elasticity and density of the corium, together with the mode of its attachment to the subcutaneous tissue, guard the deeper structures against the effects of violence.

The Action of Soap.—This brief rehearsal of anatomical and physiological facts prepares us to understand how intimately the health of the cutaneous envelope depends upon that of the general system. If the blood be depraved by the presence of noxious principles, whether generated within the organism or admitted from the external world; if the nutrient fluid has not been properly elaborated, is lacking in red corpuscles and hæmoglobin, the nutrition of the skin must suffer with that of all other tissues. Thus gout, rheumatism, diabetes, cancer, scrofula, tuberculosis, syphilis and fevers, occasion more or less characteristic lesions of the integument. Anæmia, chlorosis, disease of the liver or kidneys, likewise impair the health of the integument. A healthy skin depends primarily upon healthy blood, proper nervous tone, and a healthy condition of capillary blood-vessels. All these conditions are interdependent. On the other hand, to perform its own highly useful functions, the skin itself requires frequent ablution. Exposed as it is to deleterious influences from within and from without, it requires, for its utmost efficiency, scrupulous attention. The rate and uniformity of its capillary circulation is often rudely disturbed by atmospheric influences, organic and inorganic material is constantly being deposited upon its surface, and the accumulation of defilement is a frequent source of disease. An uncleanly skin offers an excellent soil for the growth of various pathogenic microörganisms, whereas a healthy integument is generally able to resist their invasion.

Personal beauty depends to a great degree upon the habits of life. We are not able, it is true, to reconstruct irregular features, but temperance, pure thoughts, and personal cleanliness, produce good blood, a healthy skin, a bright eye, an expression of intellect, animation and refinement, and this combination, to all intents and purposes, constitutes beauty.

A fine complexion is an essential element of comeliness, and complexion, whether blonde or brunette, whether creamy, rosy or olive, is due to activity of the circulation, the state of the blood, the presence of a sufficient but not excessive quantity of oil, the proper performance of the functions of the skin, and scrupulous cleanliness of the epithelial coat. The nutrition of the skin is to be chiefly secured by internal hygiene. The epithelial surface must be cleansed by local measures, by proper attention to the toilet. The mixture of epithelial débris, fatty matter, organic and inorganic deposits from within and without, cannot be effectually removed by the sole and unaided use of water. A substance is needed which is able to dissolve and emulsify the extraneous matter, without inflicting any injury upon the living cells of the integument. Such a substance we have in soap; that is, if properly prepared.

A Good or Pure Soap.—In a strictly chemical sense, soap is a combination of a fatty acid with a basic metallic oxide, but the term is usually restricted to the product resulting from the union of fats and oils with alkaline substances, the latter combinations alone being soluble in water. In the manufacture of soap, the fat is derived from various animal and vegetable sources. Tallow, suet, lard, palm oil, olive oil, cottonseed oil and cocoanut oil are among those most frequently employed, the choice depending to a large extent upon the place of production, in consequence of the comparative supply and price of the different fats. The alkalies—potassium and sodium—are used almost exclusively in the form of caustic lyes. A broad physical difference at once separates soda from potash soaps, the former being of relatively hard, the latter of soft consistency, although the soda soap may be made from a fluid fat, and the potash soap from the solid fatty acids. Soft soap is restricted to the treatment of disease. Hard soap is used for purposes of the toilet, incidentally aiding in the sanitation of the skin, and acting also as a prophylactic against local disease. Many medicinal substances have been incorporated in the soda soaps, with the view of making their solutions useful adjuvants in the treatment of cutaneous maladies. Soda soaps are, therefore, divisible into *toilet* and *medicinal soaps*. I shall first speak of the former class.

The integument will become soiled in the contingencies of daily life, and requires to be cleansed with soap and water. In addition to merely removing dirt, the friction employed in the act of washing stimulates the tone and the circulation of the skin. The action of the soap is promoted by the use of warm and soft water, or water free from insoluble salts of lime. The fluid should not be too hot, nor should the soap be used too frequently, or in too great a quantity. The dirt upon the skin is composed of dead and loosened epithelial scales, mixed with organic and inorganic materials, some of which have been thrown out of the system upon the skin, while others have been deposited upon the skin either from atmospheric contact, or from articles which have been handled. The object of washing is obviously the removal of this deposit without injury to the epithelium. In order to fulfil these indications, soap should be of neutral reaction or nearly so—in other words, should contain very little free alkali. According to chemical calculation, an exact combination of fatty acids with an alkaline base should result in a product of neutral reaction. This result, however, is seldom or never attained in the process of manufacture. The soap boiler roughly tests the reaction by the sense of taste, and it is asserted that the alkalinity of the same style of soap varies in each separate lot made. Be this as it may, an essential requisite of a good toilet soap is that it contains a minimum proportion of free alkali. An undue amount of alkali present will act as a direct chemical irritant, or even cauterant. A smaller proportion exerts an injurious influence by dissolving the fats of the epithelium, leaving the latter dry, harsh and easily disposed to crack. Many soaps, attractive to the sight and smell, are, on account of the alkali which they contain, no more fit to be used upon the skin than is laundry soap, and this statement is especially true of those made by the cold process. If a soap causes smarting as soon as the lather is applied, it should be washed away from the surface by means of a slightly acidulated solution, lemon-juice for example, in order to neutralize the excess of soda. The essential oils used to communicate an agreeable perfume are often irritant in their effect, and the same is to be said of the brilliant colors used to render the preparation sightly and salable. Soap is thus defined by the United States Pharmacopœia: "A white or whitish solid, hard, yet easily cut when fresh, having a slight, peculiar odor, free from rancidity, a disagreeable alkaline taste and an alkaline reaction. It is readily soluble in water and alcohol." This definition applies to the white Castile, made with olive oil, the type of a good soap. The red streaks in the mottled Castile are due to a deposit of an iron soap which, being insoluble, detracts from the efficiency of the product, and is therefore an impurity. Cocoanut oil is the least desirable of fats for soap making. As it requires a larger amount of alkali to saponify, the finished product retains a surplus of lye, besides other irritants, and the oil itself is exceedingly prone to undergo decomposition. The only advantage it possesses is its solubility in salt water, whence its name of "marine soap."

Adulterated or Impure Soap.—For various commercial reasons of economical production, in order to meet competition, etc., various adulterations are frequently added to soap. Most of these seriously diminish its value as an article of the toilet. Resin is one of the commonest impurities, and is used because its acids require less soda in order to saponify. This is contained in the common yellow soap, which is a mixture of a resin soap in the proportion of 10 to 40 per cent. or more with any hard fatty soap. The presence of a large amount of resin is decidedly irritant to delicate skins. Other substances which are often added are pearl-ash, silicate of soda, starch, sugar, and an excess of common salt. These adulterants are either harmful in themselves, or are changed by the soda lye into deleterious substances. Transparent so-called glycerine soaps are frequently completely destitute of glycerine, the transparency being due to the presence of sugar, of which the article may actually contain a larger quantity than of soap. These contaminations are more or less injurious to the integument, especially if it be diseased. Again, cheap soap is often made of imperfectly purified animal fat, which contains bacteria of putrefaction, and probably also pathogenic organisms.

In the preparation of medicinal soaps, a neutral reaction is of especial importance, as in a neutral mass the incorporated drug or drugs remain unchanged for an indefinite period, while in alkaline soaps they soon undergo chemical alteration.

Toilet Soaps.—A number of oleaginous and demulcent, or even slightly stimulant substances, make very acceptable additions to soap intended for toilet use. These, equally distributed throughout the mass, and mingling with the lather, produce a softening or tonic effect upon the skin due to themselves, and distinguished from the detergent action of the soap. A very narrow margin, in fact, separates some of the toilet preparations from those medicated to suit diseased conditions.

Lanolin Soap.—The presence of a certain amount of lanolin softens the integument, and neutralizes an irritant or solvent action due to an uncombined alkali.

Glycerine Soap.—A pure glycerine soap is an excellent preparation, particularly for use in the winter season, when the hands tend to become chapped. Glycerine soap usually contains equal quantities of pure hard soap and glycerine. An excess of glycerine will dissolve the soap, and the mixture forms but a feeble lather.

Suet may be made use of instead of beef tallow or lard.

Oatmeal Soap.—Oatmeal is an emollient ingredient of certain toilet soaps.

Bran Soap is an emollient application to rough skins.

White Castile Soap, made from olive oil and soda, is one of the best articles for the toilet, being free from adventitious irritants, such as pigments and perfumes. The mottled Castile was formerly preferred, but the insoluble iron in no way adds to its efficiency, nor is it an indication of the absence of impurities.

Marshmallow Soap.—Marshmallow is an agreeable constituent of a toilet soap. The oil of almond, incorporated in a soap, has an excellent softening influence upon the integument.

Pine-needle Extract Soap.—A soap containing pine-needle extract has an admirable tonic effect, and is a useful disinfectant for the hands of physicians and surgeons.

Shaving Soap.—A special application which applies only to men is a soap to facilitate the removal of the beard. An efficient shaving soap should be of the soda type, and semi-solid consistence. A small quantity of mild and agreeable perfume may acceptably be added in the process of manufacture. A soap which forms an abundant and rather thick froth, and permits the painless removal of hairs from the face through the habit, so customary among barbers, of "close shaving," is mentioned here only to be condemned. It destroys a thin layer of the cuticle, lacerates the minute blood-vessels which surround the openings of the hair follicles, and renders the skin irritable, tender and prone to disease.

Unna has devised a soap which he terms super-fatted. It is made with beef tallow and a mixture of sodium and potassium in definite proportions. A slight excess—about 4 per cent.—of fat is present. This soap has been principally used as a basis for the incorporation of certain medicaments adapted to treatment of diseases of the skin. In the absence of such additions, however, it constitutes an excellent toilet article, cleansing the skin from dirt, yet leaving the natural unctuousness undisturbed. It is so prepared that the unsaponified fat does not readily become rancid. Super-fatted soap, used with warm water, is said to be admirably suited for use in shaving.

Potassium and Sodium Soaps.—Turning now from its hygienic, prophylactic and cosmetic properties, we find that saponaceous preparations have a decided sphere of usefulness in the treatment of cutaneous disorders. It is self-evident, that when a surface has been cleansed of foreign matter and pathological products, it is placed under the most favorable circumstances for the action of whatsoever topical remedy it is brought into contact with, irrespective of the form in which that remedy may be applied. Cases differ, conditions differ and stages differ, so that powders, lotions, ointments, pastes and soaps have each their peculiar range of utility. But the fact that the very agent which cleanses a certain area is also the vehicle by which a remedy is applied, is a sound argument for the employment of medicinal soaps.

Both the hard and soft variety have been used in dermato-therapy. I shall dwell first upon the latter because it has been most widely used and is more powerful in its effects.

Soft or Potassium Soap.—Soft or potash soap is variously known under the names of sapo mollis, sapo viridis, green, brown or black soap. It contains a certain excess of alkali and may be made from either animal fat or vegetable oil, olive oil being chiefly used in its manufacture. The form in which it is met with is often unsatisfactory, and only the carefully prepared product of the best makers should be selected. Green soap should have the consistency of jelly, should not flow from an upturned vessel, should have a brownish or greenish color, be soft and perfectly homogeneous, have a strong, caustic odor and an acrid, alkaline taste. It should contain no sand and should be soluble in alcohol with little residue. The best quality comes to this country from certain German manufacturers. Green soap softens, macerates or even destroys the epiderm, the effect varying according as it is or is not applied with friction, and according to the time during which it is left upon the surface. It may be used under its own form or in that of an alcoholic solution, two parts of the soap being dissolved in one of alcohol. Solution removes the disagreeable odor and when filtered and scented with the spirit of lavender, it is known as spiritus saponis kalinus, or Hebra's spirit of soap.

In the "soap cure" sapo viridis is allowed to remain for some time in contact with the affected region, or is even applied with friction until blood oozes from the surface. It is used in this manner especially in chronic eczema and psoriasis. When sufficient irritation has been excited some sedative application may be used in its place. In psoriasis, the patient, after having been vigorously rubbed with soft soap, is sometimes kept for three days wrapped in a blanket impregnated with the soap, at the expiration of which time he is allowed to take a bath. In eczema affecting the scrotum, green soap may be applied as a poultice until the epidermis has been destroyed and the surface is covered with a free exudation. Good results are undoubtedly often secured by these methods, but they are are too heroic for general adoption in this country. American skins are too thin to bear with impunity such severe treatment. An excessive irritation is produced and the disease is, not infrequently, aggravated. Moreover, American people will not submit for any considerable period to harsh measures and confinement to a hospital bed on account of a condition which, though a source of annoyance and mortification, will not interfere with a successful prosecution of business.

Employed in moderation, however, soft soap removes scales, crusts and dirt, and is beneficial in the treatment of seborrhœa, ichthyosis, pityriasis, eczema, psoriasis, acne, rosacea, elephantiasis, leucoderma, scrofuloderma, and syphiloderm. Kappesser, Senator and others have made use of it successfully in the treatment of enlarged glands whether due to simple inflammation, syphilis or scrofula. Beetz speaks favorably of its action in many cases of subcutaneous and glandular suppuration. In scrofulous or tuberculous disease of the mesenteric glands, periostitis or caries amendment has followed the practice of the same method.

In carrying out this treatment the best procedure is to first, rub the soap lightly with the ends of the fingers upon a small portion of the diseased patch, gradually covering a larger area until the whole affected surface, if not too large, may be treated at one *séance*. If the area be too extensive, it may be gone over in sections, one portion at a time. If this manner of operating be well borne it may be prosecuted more vigorously, either by assistance of the finger tips, a piece of flannel or a brush. Finally, upon cessation of the manipulations the surface should be washed.

The spirit or tincture of soap, either pure or diluted with three parts of Cologne water, makes an effective liniment in cases of sprains, stiffness and pain of joints, etc. Anodynes, such as aconite, chloroform or laudanum, may be very serviceably combined with it for use in these affections.

The soft soap treatment is effective but must be carefully supervised. It is capable of readily penetrating the tissues and therefore must be sedulously watched if used in acute cases or upon delicate skins.

Soda soap is of comparatively hard consistence and is milder in its action. It can be used in the same class of cases to which potash soap is applicable and we may often, therefore, have our choice between the two forms. As a matter of practice it will often be found of benefit to begin with the hard and subsequently resort to the use of soft soap. Even in the therapeutical employment of soft soap, however, judicious circumspection is demanded.

Medicinal Soft or Potassium Soap.—Either potash or soda soap may be made the vehicle for the application of various medicaments. This places in our hands an easy and convenient method of employing local remedies, a method which, in its preliminary operation upon the cuticle, enhances the effect of the chosen medicament.

Many drugs have been used for the purpose of medicating soft soap. Those which have proved of most service are tar, naphthol, carbolic acid, sulphur, balsam of Peru and mercury.

Tar has been incorporated with green soap in the form of pix liquida, oleum fagi, oleum cadini, oleum rusci, oleum ligni fossilis empyreumaticum. Either of these may be added in the strength of one to eight drachms to the ounce of soap or its solution. These soft tar soaps are beneficial in chronic eczema, psoriasis, ichthyosis, pityriasis, scrofuloderma and seborrhœa sicca.

In the management of the same affections soft naphthol soap is of equal efficiency. Naphthol soap is made from ½ to 3 drachms or more of the drug with each ounce of potash soap. This preparation is also valuable in scabies and pediculosis.

Carbolized soft soap contains from 10 to 90 grains of carbolic acid to the ounce of soap. This combination has proved effective in seborrhœa oleasa, acne indurata, chronic papular eczema and paræsthesia. Itching as a complication of various cutaneous maladies is mitigated by the use of carbolized soft soap.

Salicylated soft soap is made in the same strength as the immediately preceding preparation. It is useful in the management of disordered function of the sudoriparous glands, as hyperidrosis and bromidrosis.

Sulphur alone has been mixed with green soap in all proportions. It has also been used in union with tar. Sulphur or sulphur-tar soft soap is decidedly curative in obstinate cases of scabies and eczema. These combinations, however, have the pronounced disadvantage of a disagreeable odor.

Balsam of Peru added to green soap in the proportion of ½ drachm or more to the ounce is an excellent application to indolent ulcers, boils and unhealthy wounds.

Mercurial soft soap is made by mixing corrosive sublimate or one of the mercurial ointments with the soap. The corrosive chloride may be used in the proportion of 10 grains or more to the ounce. Blue ointment or ointment of the mercurous or mercuric oleate may be added to the soap in the strength of one drachm to three of the former to the ounce of the latter. Sometimes, even, equal parts of each are taken. The resulting mixture is used in the treatment of obstinate syphilitic lesions, especially in debilitated subjects who are intolerant of mercury administered by the mouth. It is applicable likewise to the manifestations of early syphilis, to buboes, especially when chronic, to scrofulous ulcers, to pigmentary spots and alopecia.

Medicinal Hard or Sodium Soap.—The hard has a wider scope of usefulness than the soft variety of soap. Its value in the treatment of disease has been augmented by the addition of a great number of drugs. I have been in the habit for many years of employing medicated soda soap both in private and public practice. Like soft soap it has the power of removing thickened and hardened epidermis, dirt and morbid secretions, but is milder in its action. Nevertheless, it is capable of doing harm and must be applied with care. Precautions should be observed in its application, trying first its effect upon a small spot and if it be well borne and prove beneficial, bringing it into contact with a larger surface or with the entire diseased area. Careful observation of its effects will teach us whether it can be beneficially employed every day or less often.

The soaps which I have habitually employed are divided into cakes each containing an average weight of three and a half ounces or 1680 grains. The soaps here recommended have been manufactured under my supervision by Mr. W. H. Llewellyn, 1410 Chestnut Street, Philadelphia, Pa. The chemist having taken the greatest care in their preparation, especially to have the soaps super-fatted as recommended by Unna and Eichhoff. The soaps upon which I have learned to place the most reliance after many years experience with medication in this form, are as follows:

Alum Soap (sapo aluminis), ten per cent. or 168 grains of alum. This preparation is a beneficial agent in hyperidrosis, seborrhœa oleosa and pustular eczema, especially of the subacute form. It is of service in lupus, cancer, scrofulous and syphilitic lesions of the skin, a stimulant and astringent to ulcers and bed sores.

Arnica Soap (sapo arnica), 10 per cent. or 168 grains extract of arnica. Sore nipples, bruises, abrasions, wounds, chilblains and dandruff are improved by the use of arnica soap. It is a good application to the surface of impetigo, ecthyma, boils and carbuncles.

Boro-glyceride Soap (sapo boroglyceriti), 10 per cent. or 168 grains, 50 per cent. solution of boro-glyceride.

This is preferable to a soap containing boric acid or borax. It possesses antiseptic virtues and is valuable in the treatment of ulcers, wounds, suppurating, sloughing or gangrenous surfaces. It affords relief in paræsthesia, especially of the genitals, is useful in acne, seborrhœa and rosacea.

Camphor Soap (sapo camphoræ), 10 per cent. or 168 grains of camphor. Camphor soap allays the itching which accompanies eczema and chilblains.

Carbolic Acid Soap (sapo acidi carbolici), 5 per cent. or 84 grains of carbolic acid.

The effect of carbolic acid soap is first stimulant and subsequently anæsthetic. It likewise possesses antiseptic properties. This soap makes an excellent wash for inflamed and suppurating surfaces, such as boils and carbuncles, wounds and ulcers. It relieves pruritis and is of advantage in chronic eczema and psoriasis. Its smell, however, is a drawback, for which reason a naphthol or salicylic acid soap is preferable. Association with glycerine has been found to lessen the odor of carbolic acid soap.

Chamomile Soap (sapo anthemidis), 10 per cent. or 168 grains extract of chamomile.

Mildly stimulant and astringent and of an aromatic odor, chamomile soap is serviceable in intertrigo, dermatitis, seborrhœa, and in conditions attended by excessive and foul secretions. The addition of sulphur adds to its efficiency and forms chamomile and sulphur soap (sapo anthemidis sulphurisque). This soap, possessing the virtues of both its medicinal ingredients, is of value in seborrhœa sicca, especially of the scalp, alopecia, acne and when the skin is greasy and shiny.

Eucalyptol Soap (sapo eucalyptoli), 5 per cent. or 84 minims of oil of eucalyptus.

Eucalyptol Soap is stimulant, astringent and antiseptic. It may be used with good effect in cleansing unhealthy wounds and ulcers, abscess cavities and carbuncles. It is a good remedy for chapped hands, and overcomes the unpleasant odor of bromidrosis.

Naphthol Soap (sapo naphtholi), 5 per cent. or 84 grains of naphthol. This is one of the most efficient of the medicinal soaps. Its freedom from odor, its stimulating, astringent, antiseptic and slightly anæsthetic influence renders it useful in eczema, especially sub-acute and chronic psoriasis, pityriasis, ichthyosis and offensive discharges. Bromidrosis is controlled and often cured by the use of naphthol soap. It relieves or cures the bites and stings of many insects and animals. Naphthol soap is useful in herpes and scabies.

Salicylic Acid Soap (sapo acidi salicylici), 4 per cent. or 67⅕ grains of salicylic acid.

This preparation, which is well adapted to toilet use, is superior to a soap containing carbolic acid from the fact that it is destitute of odor and irritant properties. It is particularly indicated in a thickened condition of the integument which is often present on palmar, plantar and extensor surfaces. Salicylated soap is of value in the treatment of impetigo, ecthyma, pustular eczema, sycosis, furuncles, wounds and ulcers. It is of assistance in the management of tinea and herpes. Chapped skin and bromidrosis are also benefited by its use.

Sublimate Soap (sapo hydrargyri chloridi corrosivi), 1 per cent. or 16⅘ grains of corrosive sublimate. Sublimate soap is unlikely to excite salivation. Although I have ordered it extensively I have never known of its producing this effect. Sublimate soap may be recommended in scabies and pediculosis and for the irritation which may be present upon the body. It is an excellent application for freckles, pigmented spots, chloasma and the reddened and roughened skin which may follow the eruptive fevers, notably small-pox. It exerts an admirable tonic influence upon the skin and is a valuable local agent in improving the complexion. This soap relieves paræsthesia and the itching which is a concomitant of many cutaneous diseases. Syphilitic eruptions improve under its use.

Tar Soap (sapo picis liquida), 10 per cent. or 168 grains of tar.

Tar soap is valuable in the treatment of certain chronic affections, more particularly eczema and psoriasis. It promotes activity of the local circulation, stimulates the absorbents and reduces infiltration. It allays itching and is of service in pityriasis and ichthyosis. On account of its unpleasant odor and irritant properties, however, it may with advantage be superseded, in most cases, by naphthol soap, which is equally effective in the same conditions, and is free from the disadvantages mentioned.

The combinations enumerated, both for soft and hard soap, are those which I have found, by experience, to be the most reliable and beneficial, and which, consequently, I have most frequently prescribed. I append a catalogue of other preparations which may, upon proper occasions, be profitably employed, giving at the same time the proportion of their included drug or drugs together with their indications.

Amber Soap (Eau de Luce). This is a liquid soap, the chief ingredients of which are tincture of the oil of amber, balsam of Gilead and water of ammonia. Amber soap may be used in cases of enlarged glands, moles, warts, etc.

Balsam Soap (sapo balsami Peruviani), 5 per cent. or 84 grains of balsam of Peru.

This preparation makes a suitable wash for cleansing indolent or foul ulcers, sinuses and abscesses, wounds, etc.

Elder Flower Soap (sapo sambuci florum), 10 per cent. or 168 grains of elder flower. This soap may be suitably used in intertrigo, rosacea and sun-burn. It is a pleasant toilet preparation.

Ergot Soap (sapo ergotæ), 10 per cent. or 168 grains extract of ergot. Ergot soap is of assistance in the treatment of eczema, acne and rosacea.

Glycerin Soap (sapo glycerini), 15 per cent. or 252 grains of glycerin. Glycerin soap has been mentioned under the head of toilet soaps. Pityriasis and rough or chapped skins furnish the indications for its use.

Naphthol Sulphur Soap, (sapo naphtholi sulphurisque). 3 per cent. or 50⅖ grains of naphthol; 10 per cent. or 168 grains of crushed sulphur. Scabies, pediculosis, the bites and stings of insects, hyperidiosis, bromidrosis, eczema seborrhœa and psoriasis are the diseases in which this soap may be brought into use.

Sulphur Soap (sapo sulphuris), 10 per cent. or 168 grains of washed sulphur.

Acne and rosacea are improved by the use of sulphur soap.

Iodine Soap (sapo iodi), 3 per cent. or 50⅖ grains of resublimed iodine.

This preparation may be called into requisition in the care of scrofulous and syphilitic lesions of the skin, old granulations, etc. An iodine soap made from the Sulzbrunn iodine mineral water is said by Dr. E. Haffter, of Frauenfeld, to furnish an effective means of removing the smell of iodoform from the hands. The iodine exists in this spring water in the form of iodide of magnesium.

Iodide of Sulphur Soap (sapo sulphuris iodidi), three per cent. of iodide of sulphur, $50\frac{2}{5}$ grains in a cake.

Acne indurata, chronic ulcers, freckles, yellowish-brown or blackish patches upon the skin may improve under the use of this soap.

Kino Soap (sapo kino), ten per cent. or 168 grains extract of kino.

Eczema, rosacea and ulcers are conditions which may be benefited by cleansing with kino soap.

Lead Soap (sago plumbi), three per cent. or $50\frac{2}{5}$ grains of acetate of lead.

Lead soap may be appropriately applied to boils, carbuncles, abrasions and bed-sores.

Tannin Soap (sapo acidi tannici), three per cent. or $50\frac{2}{5}$ grains of tannic acid.

A soap containing tannic acid assists in the treatment of seborrhœa oleosa, hyperidrosis and ulcers.

Tannin-Balsam Soap (sapo tanno balsamicus), two per cent. or $33\frac{3}{5}$ grains of tannic acid; five per cent. or 80 grains of Peruvian balsam.

The above combination is usefully applied to ulcers, wounds and chilblains.

Thymol Soap (sapo thymol), three per cent. or $50\frac{2}{5}$ grains of crystallized thymol.

The non-irritant and antiseptic virtues of thymol render a soap of which it is an ingredient, a serviceable application to unhealthy wounds or ulcers, pustular eczema or other pustular diseases of the skin, to abscesses, sinuses, etc.

Turpentine Soap (sapo terebinthinæ compositus). This is known as Starkey's soap. It contains equal parts of carbonate of potassium, oil of turpentine and Venice turpentine, and is capable of rendering service in chilblains, psoriasis and syphilis.

Wintergreen Soap (sapo gaultheriæ), three per cent. or $50\frac{2}{5}$ grains of methylsalicylic acid.

Wintergreen soap is a pleasant article, applicable to eczema, psoriasis, acne, lichen, ulcers, wounds, freckles, impetigo, ecthyma, chilblains, etc.

Witch Hazel Soap (sapo hamamelidis), ten per cent. or 168 grains of extract of hamamelis.

Bromidrosis, eczema and alopecia are conditions in which we may resort to the use of witch hazel soap.

Properly made and properly applied potash or soda soap often renders efficient assistance in the treatment of diseases of the skin. The fact must not be overlooked, however, that like all other active agents, they are capable of effecting harm when improperly used. *They must not be carelessly prescribed without* regard to the nature of the ailment, stage of disease, condition of the patient, etc. Soap has a decided position in dermato-therapy. It would be, however, irrational to expect too much from these preparations. They are to be looked upon as valued assistants only, seldom able, unaided, to effect a cure, more than this ought not to be anticipated. By not expecting benefit from their use beyond their power as assistants we learn to employ them with judgment and guard against disappointment from their failure, in cases to which they are not adapted.

The super-fatted soap introduced by Unna, of which mention was made when speaking of toilet soaps, is now made by the addition of a mixture of lanolin and olive oil instead of olive oil alone as formerly recommended. The proportions in which these ingredients are now mingled with the soap mass are two per cent. of lanolin and three per cent. of olive oil. The presence of lanolin, a soft animal fat with no tendency to become rancid, of ready absorption by the skin and miscibility with water, confers additional value upon the product. A higher percentage of lanolin, however, diminishes the lathering property.

Various medicinal agents have been incorporated in this super-fatted article and employed by Unna, Eichhoff and others, who report very favorably of their advantages. From the lists and reports lately issued by the latter authority I have selected the following as an addendum to the present paper:

Aristol Soap, two per cent. of aristol.

This is recommended in psoriasis, eczema, leg ulcers, ulcerated lupus and gummata.

Benzoic Soap, five per cent. of benzoin.

A good toilet soap, useful in intertrigo and seborrhœa of the scalp.

Creolin Soap, five per cent. of creolin.

Creolin soap is of benefit in the treatment of scabies and contagious impetigo.

Creasote Soap, two per cent. of creasote.

This preparation may be used in lupus.

Hydroxylamin Soap, three per cent. of hydroxylamin.

Adapted to the treatment of lupus, psoriasis, tinea and parasitic sycosis.

Iodoform Soap, five per cent. of iodoform.

Iodoform soap is beneficial in chronic and syphilitic ulcers. When used in conjunction with massage it may promote the absorption of exudations.

Iodol Soap, five per cent. iodol.

An effective substitute for iodoform soap.

Menthol Soap, five per cent. of menthol.

Especially indicated in paræsthesia and urticaria.

Menthol Eucalyptol Soap, five per cent. of menthol with three per cent. of oil of eucalptus.

A beneficial soap in rheumatism, gout, neuralgia, urticaria, itching of the skin and as a disinfecting soap to wounds and ulcers.

Pine-needle Oil Soap, ten per cent. of pine needle oil.

This is a valuable remedy in tinea, favus, eczema, psoriasis and assisted by massage, in chronic rheumatism.

Quinine Soap, five cent. of quinine.

A mild stimulant soap in acne, after and during fevers, in dandruff or seborrhœa of the scalp.

Resorcin Soap, five per cent. of resorcin.

Of utility in seborrhœa, eczema and erysipelas.

Resorcin-Salicylic Soap, five cent. of resorcin and three per cent. of salicylic acid.

A useful soap in acne, seborrhœa and in parasitic skin diseases.

Resorcin-Salicylic-Sulphur Soap, five per cent. of resorcin with three per cent. each of salicylic acid and sulphur.

Resorcin-Salicylic-Sulphur-Tar Soap, five per cent. of resorcin with three per cent. each of salicylic acid, sulphur and tar. The two last named soaps are serviceable in eczema, psoriasis and parasitic skin diseases.

Salol Soap, five per cent. of salol.

This is an effective soap to employ in chronic eczema, psoriasis, acne, excessive secretion of perspiration and in fœtid sweating.

Salicylic-Creasote Soap, five per cent. of salicylic acid and two per cent. of creasote.

A valuable soap for chronic eczema, psoriasis, and in excessive secretions of perspiration in different parts of the body.

Sulphur-Camphor-Peruvian-Balsam Soap, five per cent. of sulphur, and three per cent. each of camphor and Peruvian balsam.

A useful soap in acne, seborrhœa, chronic eczema and psoriasis.

Sulphur-Salicylic Soap, five per cent. each of sulphur and salicylic acid. An especially serviceable soap in all chronic skin diseases, as eczema, psoriasis, ichthyosis, acne, and rosacea.

Sulphur-Salicylic-Tar Soap, five per cent. each of the preparations named.

A valuable combination in all chronic skin eruptions.

Thiol Soap, five per cent. of thiol.

A beneficial soap in all parasitic diseases, also useful in eczema, acne and rosacea.

Other remedial agents and several combinations of medicaments have been used but they are such as have been described in the foregoing portions of this paper and therefore, need not be repeated. According to the nature of the disease, its severity and obstinacy or the condition of the patient, the surface may be simply irrigated with the soap solution, the froth may be permitted to dry *in situ* or it may be retained by means of impermeable dressings.

1519 Walnut Street, Philadelphia.

AN INTRODUCTION TO THE STUDY OF THE PHYSICAL BASIS OF VOLUNTARY ACTION, MEMORY, EMOTION AND THOUGHT.

An address delivered before the Anthropological Society of Yonkers, N. Y., March 4, 1892.

BY EDWARD C. MANN, M.D., F.S.S. (LONDON).

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Mr. President, and Ladies and Gentlemen: I will ask your attention to a few introductory remarks on the psychical life of man before proceeding to discuss my main topic, which is the physical basis of voluntary action, memory, emotion and thought.

PART I.

A psychological investigation of man is necessary for the reason that though anatomy and physiology furnish us with stronger grounds in favor of the unity of mankind as a species, than the arguments advanced for the opposite theory they cannot alone be considered as decisive, and even if they were conclusive they would lose their validity if it could be proved there existed permanent psychical differences, presenting impassible barriers to the development of individual races. If it is somewhat difficult to arrive at a just estimation of the mental capacity of individuals, it is still more difficult to estimate the psychological capacity of whole nations and races. Individual nations occupy at different periods, different scales of development, and though from the actual performances we may arrive at an estimation of the faculties which produced them, they would seem to vary at times. In addition to these difficulties, there is the circumstance that the external and internal causes, which in one race affect the transition from a primitive to a civilized state, are as much hidden from us as the causes which prevented the development of another race, and apparently fixed it in the position which it once occupied. All this might make us inclined to assume a different endowment for individual races, particularly as primitive man stands in such striking contrast to civilized man, if we forget that we once occupied a similar position. The religious customs and legends of uncultured nations are too apt to be treated as curiosities, instead of taking pains to properly understand them, so as to deduce from them proper inferences with regard to psychical peculiarities or a proper characteristic of the uncivilized man. It is a hasty assumption that the psychical peculiarities of nations correspond with their physical characters, especially with the structure of the skull. History shows us the overthrow of nations who were once highly cultivated, possessed of finely formed crania, by races of inferior mental capacity and less developed skulls. The larger cranial capacity of the whites did not prevent the Turks and Magyars who entered Europe, from obtaining great conquests and becoming permanently settled. The old Egyptians possessed very small crania. The inhabitants of Tierra del Fuego, the Esquimeaux and the nations of Van Dieman's Land have uncommonly large heads. The Kalmuck and Tartar have larger crania than the civilized European, while the Laplander is particularly distinguished by a large skull. The same or similar intellectual and moral dispositions coëxist with different cranial formations, and different dispositions, with the same or similar cranial shape and capacity. We see one and the same race proceeding from barbarism to civilization, and again relapse from its high state and its capacities decline, but as the cranial shape remains the same, the assertion that the intellectual faculties are dependent on it is incorrect. The capacity of the cranium does not indicate the amount of mental endowment. As in physical respects, all men may be considered as belonging to the same species, if it can be proved that the greatest physical differences occurring among them are not more considerable than such as may have arisen in the same people in the course of time; so we can, in psychical respects, count all as belonging to the same species, if it can be shown that the greatest differences of their mental development and their intellectual and moral culture, are not greater than the differences of the degrees of civilization, which the same race passes through in its history. Of course, it would be absurd to suppose that races passing through different stages of development should be capable of the same intellectual performances. The capacities of a race may change in time, and we have to decide whether under favorable circumstances, in the course of time, all nations and tribes are capable or not, of reaching the same degree of mental development. We have to examine as to the greatest differences existing in the various races, as regards mental development and the greatest changes which, in this respect, take place among the same race. We will start from the assumption that, as in the life of individuals, so also in that of nations, all cultivation is something secondary, resting upon a gradual progress to a better state than was the primitive or natural state of man. This natural state marked by the absence of all cultivation, we must imagine to have been the original condition of every race. A mode of existence in which all intellectual and moral forces were yet undeveloped. We are compelled to proceed from the assumption that all men were originally psychically equal, but we have a possible supposition that some—owing to superior predisposition, or in consequence of an innate specific impulse, have more easily worked their way out of that uncultured period than other races. We must first find out the specific characters of man, *i. e.*, those which distinguish him from the brute, in order to learn whether or not these characters pertain to all races and individuals and secondly, whether within these characters which constitute the psychical essence of man there exist permanent differences. In order to arrive at a correct estimation of the differences between the various stocks in mental development, we shall have to take into consideration the circumstances which induce man to leave the natural state; whereby we may learn whether the existing differences in development are the result of specific differences in mental endowment, or the consequence of different environment, mode of life, contact with other nations. In short, of their historical events, or possibly of the combination of both.

SPECIFIC CHARACTERS OF MAN.

The physical differences which distinguish man from the brute are too well known to need mention. With regard to his psychical life the differences are not so manifest. Some animals possess a certain perfectibility, such as the dog, horse and elephant. By the influence of man they reach a higher degree of mental culture than they originally had. Their sphere of thought is evidently capable of enlargement beyond what appears to be its natural limits. Man learns from experience, but so do animals. The word "instinct," which is, I think, heredity of memory, conceals in the psychical life of animals more intellectuality and less mechanism than usually is assumed. The teachings which man derives from experience are not only more comprehensive, but they exercise a deeper influence on the whole formation of his external and inner life, than is the case with the brute, and enable him to occupy a dominating influence even in the lowest grade of civilization. Just as the civilized man conquers the savage, the latter overpowers the brute, not so much by physical as by mental force. Language as the expression of emotion, is a specific human peculiarity. Even the most barbarous nations possess a language with a more or less grammatical structure. The possession of language establishes a near relationship between all races in psychical respects, agreeing, as they do, in the most essential peculiarity of intellectual life, namely, in the power of arranging the relations of substantive separate ideas, so as to give them a definite oral expression. In the presence of this common feature of the human mind, all other differences lose their importance and make us more inclined to consider them as merely differences in degree; the more so as there are races who, despite their mental degradation, possess a language by no means undeveloped as regards grammatical structure. A third chief peculiarity of man is his social character, by which men associate together, and in tribes and families. The specific psychical activity of man is seen therefore in three directions: 1. In availing himself of surrounding natural phenomena for his own objects, profiting largely by experience. 2. In giving outward expression to his internal feelings, either by language or other visible signs, and 3, in his social relations, with their concomitant rights and property, leading to certain gradations in society, and to a closer attachment to his own race.

Though we find here the elements from which science, art and morality gradually arise, there is yet another principle, leading to a higher spiritual development, viz.: the religious element. This is nowhere entirely wanting, and though it may manifest itself in the crudest form, its influence can be traced in every race. The investigation of the greatest differences existing in the psychical life of mankind has proved unfavorable to the assumption of specific differences, which we are warranted in considering as merely fluctuating, and traceable to the opposition of nature and cultivation, and if we examine the degrees intermediate between the natural and the civilized state, we shall see that the progressive mental development of some races, and the remarkable stability of others, essentially depend upon other causes than on the differences of their original mental endowment. The psychical endowment of the various races was most probably originally the same, or nearly so, and the earlier or later emergence of individual races from the primitive state, essentially depended on the natural and social conditions in which they were placed; and by these external circumstances in their manifold concatenations, the extent and rapidity of their development is mainly determined. I must refer here to a principle I have already touched upon, viz.: that the development of mankind in the course of time, produces a favorable predisposing influence on the psychical endowment of the progeny, which increases with the progress of civilization, which predisposition must be less, the nearer a race is to the primitive state. This partly explains why we see so many races apparently stationary, whilst others proceed rapidly from a certain point. The greater natural inclination and capacity for civilization manifested by some races is nothing original, but something acquired in the course of their development, which, under favorable circumstances, might have been equally acquired by races who appear, at present, less capable of civilization. With regard to the development of public law and government, we cannot but recognize in climate, mode of life, density of population and its intermixture with foreign elements, and the development of mental activity, powers which are but remotely governed by laws, whilst they undoubtedly influence the formation and efficacy of the latter. The security of private property is the most important of all legal institutions, and the very basis of civilization. Its origin among primitive peoples and its development, depend chiefly on the relations between the modes of life and the necessities of the population, and the area and natural conditions in which they live. The sum of the effects on civilization by men living in communities are, the discipline of the masses, they being gradually habituated to obedience and self-control; greater protection for life and property, which enables the people to devote their activity to other purposes; the establishment of a community of interest and action against external powers, etc. One circumstance which plays no little part in the progress of civilization, is the emergence of highly gifted individuals from the mass of the people, who, as rulers, heroes or law-givers, transform the position of the people, change its relations with other nations, regulate its internal constitution, expand its horizon in science and art, improve their morals and direct their attention to nobler objects. It is by individual, great teachers of humanity, that the progress of the mass is mostly effected. There must, however, be a mental susceptibility among the people, and a happy combination of circumstances, in order that the talents of an individual may lead to important results and have their full effect on civilization. The progress of knowledge is a great cause to which civilization owes its development and duration, and the intellectual development of a race is the standard of its civilization. The various degrees of culture in various races depend in a much greater degree on the mode of life, the historical events and other elements, than on their original mental endowment, which, however, does not exclude the latter and which possibly, also, may have its influence. Barbarism and civilization prevail, probably, among all peoples of the earth, and powerful impulses are required to change their conditions, but as regards the further development of already partially civilized peoples, there is this circumstance in their favor, that in consequence of the civilization already acquired, the progeny inherit better predispositions than these possessed by their progenitors. The study of the psychological nature of man, shows that there exists an extremely gradual variability in the mental development of races, which justifies us in considering the greatest differences in the states of civilization as merely different in degree. That the conditions for mental development are essentially the same in all races, and there is no good or sufficient reason to assume specific differences among mankind. The great value of civilization above the primitive state lies chiefly in this, that it places human life upon a different foundation from that in which it took root. In the natural state, it was the individual interest, which, in the form of the instinct of self preservation and sensual enjoyments, acted exclusively on man, whilst in the civilized state, the general interests begin to predominate. Physical enjoyment is in its nature confined to the individual, but psychical advantages have the tendency to become common property. Civilization is the development which nature designs for man, in which all men participate, though the parts which they may take in it may greatly differ. Man's mental efforts gradually predominate over the physical, and are made that they may benefit the world. When we look at the great differences of races, and the immense influence of natural conditions and climates which preserve these diversities, we become convinced that there is little probability that a uniform civilization will ever prevail among all races of the earth. Nature seems inclined to preserve a diversity in the physical and psychical characters of mankind. We must not infer from this, however, that some races are intended by nature for civilization and others for barbarism. The progress of civilization is mainly effected by labor, and this is physical, social or intellectual, accordingly as it is directed to physical well being, the preservation of social order or the promotion of knowledge. Our civilization is too artificial and abstract, immediately to attract uncivilized nations, and such races must first pass through a long series of transitional stages before our culture becomes accessible to them. In order to arrive at it, the vital power and energy of a people must neither have degenerated into idleness and sensual enjoyment, nor have been exhausted by misery and distress. Civilization must progress slowly or it will retrograde. All history shows this.

PART II.

I come now directly to the discussion of the physical basis of voluntary action, memory, emotion and thought.

A study of the physiology of the nervous system shows us that nerve-force is generated in or by the vesicular neurine, and that the tubular or fibrous neurine conducts it. But, what is the nerve-force of the brain? And in what manner is its vesicular neurine active? The result of its activity we know, namely, the ability to receive sensations of all kinds; the power of comparing these sensations and of storing them for comparison; the power of combining these sensations in new arrangements, of imagining—not, indeed new sensation—but combinations of them; the power of feeling emotions and propensities.

The activity of the vesicular neurine of the brain is the occasion of all these capabilities and powers. The little cells are the agents of all that is called mind, of all our sensations, thoughts and desires; and the growth and renovation of these cells is the most ultimate condition of mind with which we are acquainted. If there are more profound conditions they are beyond our knowledge. Now how is the nutrition of the brain-cell effected?

The grey substance of the brain contains millions of vesicles, lying in a semi-fluid granulated substance (stroma), and bound together by a minute network of capillary blood-vessels and fine areolar tissue. Now, the fundamental truth of physiology being the activity of the cell, and this activity being accompanied by its decay, and demanding its renovation; the important points in the relative position of the brain-cell are, first, its relation to the nerve fibre, from which it receives and to which it conveys impressions, the taking and giving of which are the main causes of its exhaustion; second, its relation to the blood capillary, which exudes a plasma in which the cell is bathed and renovated, and from which new cells are formed to replace those which are finally exhausted. Respecting the first of these relations, so far as the individual cell is concerned, it would appear, that morbid results could only arise from stimulation so excessive as to hasten the progress of decay beyond the power of reparation. Respecting the secondary relation, numberless circumstances may occur to interrupt or prevent the growth or reparation of the cell. All states, either physiological or pathological, of the brain-cell, are occasioned by influences impressed upon it either by the nerves or blood vessels, with which it stands in such intimate relation. Whether any changes can be self originated is doubtful. The laws of its life, transmitted to the cell from the parent organism, include, indeed, the conditions of perpetual change, but the cause of change must be sought for in the nerve, or capillary.

Voluntary action.—What happens in the simplest form of voluntary action? A baby sees what it wants and seizes it. There is a particular impression on the sense of sight, a conduction of the molecular motion caused thereby to a special nerve-centre, and the consequent excitation of a special perception as the ingoing process; then, as the outgoing process, the transmission of liberated energy along motor nerve to muscle and a consequent adaptive act. What we call a reflex action in the mental plane. Voluntary action is a power of better quality and higher dignity in man than in the animal or the baby, but even in its first stage of evolution the animal and the baby soon learn to voluntarily restrain themselves from doing what their first impulse was to do, of two courses to choose the best, the path of prudence or duty in preference to the path of natural proclivity. They are taught by adults and where the animal or the baby withstands the impulse to do what it wants to do, there is, along with the special perception, the immediate stimulation of the associated nerve centre that has suffered and registered the memory of the suffering; and the consequence is, the resistance to, or inhibition or check of the instant impulse and the prevention of the movement. It is the physical basis of morals, I think, that one of two associated nerve-centres may be excited to check or inhibit the other. It is by virtue of this physiological property that structure is moulded along the lines of function, and that the ease of performance which we call habit is acquired. A voluntary action, then, is a motion or group of motions accompanied or preceded by volition, and directed toward some object. Every such action comprises the following elements: knowledge, motion, choice, volition, intention and thoughts, feelings and motions adapted to execute the intention. These elements occur in the order in which I have enumerated them. Suppose one of you about to act. Your knowledge of the world in which you live and of your own power, assures you that you can if you like, do any one or more of a certain number of things, each of which will effect you in a certain definite way, desirable or undesirable. You can speak or be silent. You can sit or stand. You can read or write. You can keep quiet or change your position to a greater or less extent and by a variety of different means. The reasons for and against these various courses are the motives. They are taken into consideration and compared together in the act of choice, which means no more than the comparison of motives. Choice leads to determination to take some particular course, and this determination issues in a volition, a kind of crisis, of which every one is conscious, but which it is impossible to describe otherwise than by naming it, and as to the precise nature and origin of which many views have been entertained which I need not here discuss. The direction of conduct towards the object chosen is called the intention or aim. Finally there takes place a series of bodily motions and trains of thought and feeling fitted to the execution of the intention. I think this is a substantially correct account of normal voluntary action. It would be difficult to attach any meaning to the expression "voluntary action," if either motive or choice, or a volition, or an intention, or actions directed towards its execution were absent, though they may not always be equally well marked.

Mental disease or disease of the brain, powerfully affects, or may affect, the knowledge by which our actions are guided; the feelings by which our actions are prompted; the will by which our actions are performed, whether the word will is taken to mean volition or a settled judgment of the reason acting as a standing control on such actions as relate to it. The means by which these effects are produced are unnatural feelings; delusions or false opinions as to facts; hallucinations or deceptions of the senses; impulses to particular acts or classes of acts; and in some cases, it is asserted, a specific physical inability to recognize the difference between moral good and evil as a motive for doing good and avoiding evil.

The brain and nervous system are the organs by which all mental operations are conducted. When a man either feels, knows, believes, remembers, is conscious of motives, deliberates, wills, or carries out his determination, his brain and his nerves do something definite, though what that something is, what parts of the brain are specially connected with particular mental functions, by which part a man remembers, by which he conceives, and how any part of the brain acts when any of these operations is performed, no one knows. All that we know is, that one set of nerves carry to the brain a variety of impressions of external objects and occurrences, that these impressions excite emotions which affect many parts of the body in different ways, and which in particular affect the brain; that the brain in some manner deals with the impressions, whether of perception or of emotion, which it receives, during which process the man is conscious of what we describe as emotion, motive, deliberation and choice, and at the moment when the man is conscious of volition, some discharge from the brain, through a different set of nerves from these which convey impressions to it, acts on the various parts of the body in such a manner as to cause those groups of bodily motions which we call voluntary actions.

The functions of feeling, knowing, emotion and willing are mental functions, and as we have seen, the ultimate condition of mind with which we are now acquainted consists in the due nutrition, growth and renovation of the brain cells. We have seen that the brain cells are nourished from the blood, and this nutritive renovation takes place probably principally, if not entirely, during sleep. and anything that interferes with the uniform and healthy interchange of nutritive plasma passing from the vessels to the cells and if the fluid cell contents in a state of involution or degenerative metamorphosis passing from the cells to the vessels, deranges the intimate connection between the nervous and vascular systems through which their most important functions are performed, producing at once grave disturbances of the nervous system which may affect voluntary action and also memory, emotion and thought. In fact the elementary disturbances of the brain functions which we meet with in disease of the mind, involve processes in the emotional sphere; processes in the sphere of the conceptions, comprising the reason and memory, and processes in the psycho-motor sphere, the impulses and the will. The result of these morbid processes is to induce morbid delusive conception or perception of subjective origin, causing change of mental character as compared with former self or normal ancestral type, through organic conditions originating in disease within the system, external motives playing but a secondary part when they influence at all the mental conduct. To have normal voluntary action, memory, emotion and thought we must have a normal cerebrum with a proper conformation and development of hemispheres; normal coverings or membranes of the brain, with blood vessels of the normal size; the convolutions of the brain must be developed sufficiently; we must have, in short, freedom from any and all abnormalities either of structure or function of the centric nervous system. Any disease, malformation or interference with these parts by mechanical, chemical or vital causes may produce disease and interfere with voluntary action, memory, emotion and thought. Criminal impulses may easily haunt a mind naturally innocent and pure, when the mental functions of feeling and knowing, emotion and willing are not performed in their regular and usual manner by reason of diseases of the nervous system. It is a very simple thing to get up a false action of conception or judgment, a defective power of the will or an uncontrollable violence of the emotions and instincts; first, by primary disease or defective development of the encephalic centres, second, by disorder of, or developmental changes occurring in other organs than the encephalic centres and third, by stimulants and narcotics.

Among the predisposing causes which disturb memory, emotion and thought we find hereditary predisposition; the great mental activity and strain upon the nervous system that appertain to the present age and state of civilization; great difference of age between parents, influence of sex, of surroundings, pre-natal causes, physiological crises, epilepsy and intemperance. Among the exciting causes, may be mentioned trouble and excessive grief, intemperance, excessive excitement of whatever kind, epilepsy, disordered physical functions, fevers, injuries to the head and spine, sunstroke and overwork. I think fifty per cent. of all the disturbances of memory, emotion and thought may be traced directly or indirectly to intemperance.

To have voluntary action, memory, emotion and thought of the highest type, races should strive to get a physique and a stability of nerve tissue capable of meeting successfully the demands that climate and civilization make. Great attention should be paid to environment, diet, fresh air, exercise, proper rest, sleep and tranquillity of life. Respecting emotion and thought, there is a realm of inquiry of unprecedented interest to the student of psychology and of immense importance in many practical relations of life. I refer to the effect of the hereditary taint of insanity on man and his offspring. The brain comes into the world with the same imperfections and deficiencies, the same irresistible tendencies to disease or perversity of action which have long been observed in regard to other organs. We must necessarily take this into account in forming theories of human action, and it will throw new light on many a dark problem of human conduct.

Emotion and thought, conduct and responsibility are seriously affected, and responsibility in particular may be impaired, by that cerebral condition—neither of health nor of disease as these terms are usually understood—which is produced by tendencies to disease or ancestral vices. There is a prevalent mistake of regarding no disease as hereditary that does not descend fully formed directly from parent to child.. This is not so, for the force of inertia often causes disease, and especially mental disease, to remain latent for an entire generation and probably more. To lie concealed however, does not mean necessarily to be destroyed. Disease is an ultimate product, elaborated from simpler elements during a period that may embrace more than one generation; its essential element, considered in any stage of its progress, is imperfection, defect, abnormal depreciation, to be manifested under the process of hereditary transmission in every variety of form. This leads us to a correct theory of the production of disease of the mind. Under the adverse influences of a highly civilized condition, the cerebral system suffers in common with the others; while the signs of such suffering will generally be found only in the mental manifestations, varying all the way from some slight peculiarity or anomaly of character to the gravest moral or intellectual impropriety. The defect, under the predominant influence of a different blood, may not be witnessed in any succeeding generation. More frequently, however, even in spite of this conservative influence when present, it does make its appearance again, in one or more of the descendants, in forms more or less severe than the original.

Memory, emotion and thought and also character and conduct are determined, in a great degree, by the original constitution of the brain and nervous system and I feel sure that as you all are led by the teachings of science and the stern facts of observation, you will be disposed to make a proper account of those cerebral qualities which imply a deviation, of some kind or other, from the line of healthy action. That it will be in accordance with your philosophy to see in them an explanation of those strange and curious traits which are utterly inexplicable on the principles that govern the conduct of ordinary men, and I feel sure that you have been led far enough in the paths of science by your able President, to find in them a clew to some of the mysteries of human delinquency. Only the more demonstrative forms of mental disease are supposed to be capable of affecting the legal responsibility of men, but you all well know, that a person who in most respects, is rational and observant of the ordinary proprieties of life may be so completely under the influence of disease as to be irresponsible for many of his acts. The course of emotion and thought, the sense of moral distinctions, the actual conduct may all be greatly affected by the influence of such imperfection. We are bound by a sense of justice and the claims of science to make some account of it in forming our estimates of character and fixing the limits of responsibility; and knowing that an individual is descended from a line of progenitors abounding in every form of nervous disorders, shall we think it strange that some portion of it has come to him, and knowing that the quality of the brain is necessarily affected by such disorder, shall we not seek in this fact for an explanation of what we could not explain upon any ordinary principles of human conduct? The hereditary taint of insanity appears in various stages of progress, from the lowest to the highest grade of intensity, and under a variety of forms and aspects. Their effect on the mental capacity and vigor and on the complexion of the moral sentiments and determinations; their connection with the habitual and transitory impulses, with the power of resisting evil and pursuing good, are points we need to study more thoroughly in forming our estimates of character, especially in reference to moral and legal reponsibility. They are agencies which should no less engage our attention and be no less effective than education, social influences or mental endowments. Defect of brain, necessarily in one way or another affects its functions, causing changing and misleading subjective impressions of the person affected, coupled with the resultant change of conduct or of reasoning, or both. There is morbid delusive conception or perception of subjective origin, causing change of mental character as compared with former self or normal ancestral type, through organic conditions originating in disease within the system, external motives playing but a secondary part when they influence at all the mental conducts. Change of character is the ultimate symptomatic expression of mental disease, change of mental conduct the immediate, and repetitions of conduct make character.

We have made a psychological investigation of man; have made an attempt at an explanation of the physical basis of voluntary action, memory, emotion and thought, and finally have tried to explain some of the great underlying truths that govern mental pathology. I have been guided by both an active and a thoughtful acquaintance of the subject, the result of experience in the field of diseases of the nervous system, and I crave your indulgence for any shortcomings while thanking you for your attention and the honor you have shown me in inviting me to appear before you this evening.

128 Park Place, Brooklyn, N. Y, March 4th, 1892.

A RECORD OF CASES TRACHEOTOMIZED.

Read before the Northeastern Medical Society of Michigan, March, 1892.

BY FREDERICK LOHRSTORFER, M.D.,
OF PORT HURON, MICH.

While intubation will in all probability render the need of tracheotomy less frequent in the future, the latter must and will always remain the classical operation and *dernier ressort*. Intubation has a rather more limited range of usefulness than tracheotomy, being most applicable in very young children. Even after O'Dwyer's tube is inserted, the surgeon must be in continual readiness to perform tracheotomy, lest the former operation prove insufficient. O'Dwyer's tubes are liable to become displaced; secretions dry in them and are not easily removed; sometimes they occasion difficulty in swallowing; in inserting them the membrane may be detached and pushed into the lumen of the trachea, blocking respiration completely, and sometimes necessitating a hasty tracheotomy to save the patient from immediate suffocation. The pressure of the tube in the larynx and trachea often causes ulceration. Extension of the membrane beyond the end of the tube may eventutually require tracheotomy to be supplemented to or substituted for intubation. However, my object is not to compare the respective merits of these two procedures. Both have their advantages and disadvantages, and neither should be used to the exclusion of the other.

I wish to present to the members of this convention a series of seven cases of tracheotomy performed in the year 1890. Diphtheria was quite prevalent in Port Huron at that time, and many cases presented the laryngeal type of the disease, necessitating operative interference. They all showed marked obstruction both to inspiration and expiration, and no reasonable hope could be entertained in any of them of recovery without operation. A skilled nurse was placed in charge of every case, and contributed largely to the favorable results obtained. The medicinal treatment consisted in the administration of tinct. ferri chloridi, and potassium chlorate or bichloride of mercury, with strychnia and alcoholics as heart tonics. Peptonized milk diet. An even temperature of 80° F. was maintained, and instead of keeping the whole room filled with vapor from boiling water, a steam atomizer spraying lime-water was allowed to play on the tube a large portion of the time. I found the little ones take very kindly to this procedure, and it is much easier and more effective in its application. Solvents and antiseptics can thus be readily used without causing any distress. I make the following transcriptions from my case record:

Case 1.—Carrol K., æt. 4. On April 4 found child up and playing around the room. Parents said he had been sick for four or five days with a bad cold. They did not pay much attention to it until a croupy cough set in, when they decided to send for a physician. On examination, I found an extensive, well defined membrane covering the uvula and both tonsils. No fever. Pulse moderately accelerated. Diagnosis, diphtheria. Vigorous treatment at once instituted, both with internal medication and by the use of the steam atomizer. The symptoms gradually became more urgent, difficulty in breathing increased every hour, and tracheotomy was evidently indicated. The operation was performed on Sunday, April 7, at 2 P.M., Drs. Clancy and Platt assisting. Operation was uneventful. Patient rallied nicely from chloroform, and manifested a desire for something to drink. A glass of milk was offered, of which he drank eagerly. The dyspnœa symptoms had all disappeared, and patient slept for several hours. The steam atomizer with lime-water was kept playing on the tube almost continually for several days. During this time he breathed easily. On the third day after the operation it became apparent that the membrane was extending down into the trachea. The pulse at the same time became faster and feebler, and patient was evidently sinking. At 5 A.M. of April 10, eight days after my first call and on the fifth day after the operation, patient had a light convulsion, during which he died.

Case 2.—Johnny M., æt. 7. January 1. One of a family of seven children. Was first called to attend in the family on December 20, 1889. Diagnosis, diphtheria. Children were all attacked in succession. As soon as one recovered another would be taken down. Patient was the fourth one attacked. Symptoms gradually became more urgent. Cyanosis appeared, and respiration became very stridulous. All the muscles of the chest and neck brought into play to secure the necessary air. Operation performed on Sunday evening, January 5, 1890, at 11 o'clock, Dr. McDowell assisting. Patient rallied quickly from chloroform, and slept several hours. Tube covered with antiseptic gauze and kept warm and moist. Steam atomizer used on tube fifteen minutes of every hour, night and day. Full doses of iron and chlorate of potash internally. Pill strych. sulph., $\frac{1}{100}$ gr. tid., as heart tonic. Pulse frequently as high as 160; moderate fever at times. Profuse discharge from tube. On fifth day after operation could breathe a little through mouth on closing up tube. Instrument removed, and wound covered with antiseptic gauze. Steam atomizer with lime-water continued as before. Bichloride of mercury substituted for potassium chlorate internally. Appetite good; discharge from wound very free. Passage through larynx gradually reëstablished. On sixth day wound drawn tightly together with adhesive strips. Breathing through mouth rather difficult, but possible. Aphonia still present. From now on there was a steady improvement, and in two weeks after operation external wound was entirely closed, some bronchitis remaining. Huskiness of voice persisted for two months after operation.

Case 3.—Algin S., æt. 12, January 23, 1890. On Sunday, January 23, at 11 A.M., was hurriedly called to perform tracheotomy on patient. On examination found patient breathing with great difficulty, and cyanosis marked. He begged me to hurry and do the operation, as he was choking to death. Dr. Campbell was in attendance, and stated that patient had been sick for a week past. Laryngoscopic examination showed larynx packed full of grayish membrane. No membrane in pharynx or on tonsils. Diagnosis, diphtheria. Chloroform immediately administered and tracheotomy performed, assisted by Drs. Mills and Campbell. Patient rallied nicely and wrote on slate that he felt very comfortable, and expressed his gratitude for the relief afforded. At 1 P.M. of the same day I called again, and found him breathing easily. Pulse fair, slight fever. He expressed himself as feeling very well. About fifteen minutes after my departure he suddenly arose from the bed, and seizing the nurse around the waist, he whispered in terror, "Oh, I am going, I am going." There seemed to be no obstruction in the tube, as he breathed easily. He died a few moments after, evidently of heart paralysis. A post-mortem examination on the following day showed a thick, tough membrane lining the interior of the larynx and trachea, and extending down into the bronchial tubes, forming a perfect cast of the parts affected.

Case 4.—Freddy W., æt. 5, October 30, 1890. One of a family of six children. Patient had been under the care of another physician for several days previous. He was breathing heavily at the time of my first visit, requiring all the auxiliary muscles of respiration. On examining the fauces only slight traces of membranous patches could be detected, but scars on the tonsils showed that a membrane had been present, but had already become detached. Voice entirely lost. Cough croupy. Father stated that he frequently had choking fits, and he was afraid he might choke to death in one of these. Features anxious, pulse 140. Diagnosis, laryngeal diphtheria. Treatment immediately begun with steam atomizer, using a solution of lime-water and sulpho-calcine. In the evening called in Dr. Mills as counsel. Obstruction to respiration more marked than in afternoon. Face of an ashy hue; patient very restless; pulse 160. Immediate operation advised. Tracheotomy performed at 9 P.M., Dr. Mills assisting. Patient rallied well from chloroform, and breathed quietly. Bichloride of mercury and tincture of iron in full doses every hour. Pill strychnia sulph., $\frac{1}{100}$ gr. tid. Steam atomizer every hour for a period of fifteen minutes, using a solution of sulpho-calcine. Discharge from neck very free for the ensuing week. Tube removed on fourth day after operation, although but little air could be gotten through the natural passage. One hour after operation no air could be drawn through mouth on closing tube with finger. Discharge gradually decreased. Opening through pharynx became reëstablished, and wound was drawn together with adhesive strips. Patient made a slow recovery, remaining pale and anæmic for two months afterwards.

Case 5.—Willie M., æt. 5, November 15, 1890. Patient of very slight build, pale and thin. History of throat trouble for a week past, but parents had neglected to call a physician. Considerable obstruction in respiration. Pulse 140, and fever. Active treatment at once begun. November 16. Patient passed a restless night, dyspnœa becoming marked. Pulse still very weak and rapid; face assuming a sickly ash-colored hue. On afternoon of same day, Sunday, November 16, brought Dr. Mills in as counsel. Operation decided upon. Tracheotomy immediately performed. Patient acted badly under anæsthetic, and several times it became necessary to stop and inject stimulants for heart failure. When operation was completed patient appeared to be dead. Brandy freely injected and artificial respiration kept up for some time. Patient slowly rallied, but outlook very dubious. Expected to find him dead on return in evening, but found him somewhat better. Same treatment as in previous cases, except that patient would voluntarily drink large quantities of whisky, as high as a pint a day being taken. Discharge from tube very free. Instrument removed on fifth day. Patient made a good recovery.

Case 6.—Karl K., æt. 4, November 23, 1890. On my first visit found three of a family of five children down with diphtheria. Two already had laryngeal croup, with a high degree of obstruction. Family of a scrofulous and perhaps syphilitic diathesis, being covered with various kinds of eruptions. One child died immediately after my first call, being so far gone that no treatment was attempted. Patient was immediately operated upon, Dr. Mills assisting. Patient acted badly under anæsthetic. More than ordinary difficulty was encountered, on account of a short, chubby, fat neck; trachea deep down in neck. Tube finally inserted, and free respiration established. Slight localized convulsions made their appearance soon after completion of operation, but were controlled by chloroform and hypodermic injections of camphorated oil. He finally rallied, and did nicely for two days. Same medicinal treatment as in previous cases. Steam atomizer used as well as possible, but patient very intractable, and little accomplished with it. Food and medicine could only be administered by force. Pulse rapid and weak; temperature 103° F. On the evening of November 25, two days after operation, I called and found child apparently doing well. He was sitting up in bed, but acted very sullen. Fifteen minutes afterward, while the nurse went out for a short time, patient suddenly died, probably from heart paralysis, as there was no obstruction in the tube. Post-mortem examination refused. Another child 3 years old was very ill by this time, but operation was rejected, and it gradually choked to death twenty-four hours afterward. A 6 weeks old babe also died one week from the last one.

Case 7.—Lulu M., æt. 4, December 5, 1890. Case seen in consultation with Dr. Campbell. She had previously been attended by another physician. When Dr. C. first saw patient, she was breathing with great difficulty. A cursory examination revealed diphtheria of the larynx, pharynx and nose. Pulse pretty good, but considerable drowsiness. Operation performed at 12 o'clock midnight. Steam atomizer used a large portion of the time; internal administration of tincture ferri, bichloride of mercury and strychnia. Nose thoroughly syringed every hour with solution of potassium chlorate. She did well for twenty-four hours, but then began to fail. On second day after operation obstruction to respiration appeared again, membrane evidently getting below tube. Patient very restless. Tube removed, whereupon breathing was easier for a time. The amelioration did not last long, however, and tube had to be reinserted. Pulse became very rapid and fluttering. Camphor, ammonia and nitro-glycerine injected, but with only temporary benefit. The entire system seemed to be saturated with the diphtheritic virus. About 12 o'clock midnight, forty-eight hours after operation, she had a convulsion, during which she died.

It will be seen from the above record of the seven cases, three terminated in recovery, or 43 per cent. Records of large numbers of cases usually show from 25 to 35 per cent. of recoveries, which is probably greater than we can usually expect in private practice. As a matter of practical importance, provided the case be not in immediate danger of asphyxiation, the operation should be proceeded with deliberately. Tracheotomy must frequently be done under very unfavorable circumstances as regards light and sufficient assistance, and free hæmorrhage is an annoying complication; therefore care should be taken to avoid every vessel possible. The trachea should be plainly exposed, and all bleeding stopped before incising it. From my experience thus far, it would seem advisable to remove the tube at the earliest possible moment, even before much air can be drawn through the mouth. It can be easily reinserted if necessary, and irritation and ulceration of the trachea are thereby avoided. As with many other operations, an early performance holds much better promise than a late one.

When a loud stridor is heard both on expiration and inspiration, and when the accessory muscles of respiration are brought into play, if the condition do not improve very shortly, and the complexion indicate imperfect oxygenation of the blood, an operation should be done at once. Delay is dangerous. These little sufferers tire very quickly under so tremendous a strain, and if it be kept up too long, tracheotomy will offer little hope. Done early, before the vital powers are exhausted, it will frequently add two or three days' time, during which the disease may be gotten under control, and an almost inevitably fatal issue may be turned into a brilliant recovery.

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Scientific Meeting, February 16, 1892.

J. C. Lange, M.D., President, in the Chair.

(Dr. R. Williams paper concluded from page 430.)

Illustrative of this, I am furnished the history of Mrs. ——, delivered at Homewood, in the summer of 1891, who passed through a normal labor until the ninth day, when her physician was sent for, and found her pale, weak and bloodless. A syringe and hot water removed two quarts of clots. Phlebitis complicated the case, but the patient recovered.

Patients constitutionally predisposed to flooding are perhaps the most interesting of the class mentioned, and well merit the appellation of "bleeders." They follow the inclination of predisposition, in spite of every exertion the physician puts forth, to a certain extent, and at times only mechanical pressure will relieve.

There are few sights more dreadful to look upon than the worst cases of post-partum hæmorrhage. A reign of terror ushers it into view, and that one who is at his post, equal to the occasion, and to the emergencies that arise, has within him the elements of a hero. The pulse is a mere thread, or perhaps is imperceptible; syncope manifests itself, and with it is born a hope of thrombosis in the venous sinuses; and yet there may be fatal syncope. Intense weariness and faintness comes on, and the patient, wildly tossing her arms, is with difficulty restrained. Respiration becomes gasping and sighing, suffocation seems impending, and the patient calls for more air. The skin is deadly cold, the face pale, and covered with profuse perspiration. If the hæmorrhage is not controlled, loss of vision, jactitation, convulsions and death speedily follow.

The treatment of post-partum hæmorrhage, principally, should consist in using preventive measures. If the uterus is firmly held in contraction until the secundines are extruded, and the fundus held in the grasp of the hand until the first half-hour is passed; if only, when assured that permanent contraction has manifested itself, the binder is firmly applied, and if a full dose of ergot is immediately given, cases of post-partum hæmorrhage would be much less frequent. If the history of the patient is one of post-partum hæmorrhage, then a greater care should be taken. It will be well to administer subcutaneously, a half-hour before the supposed termination of labor, a full dose of ergotine. If then the os is dilatable, and one has prepared for the emergencies that *might* arise, rupture the membranes, and take advantage of every means to insure regular and, if possible, permanent contraction. If the pulse does not fall slightly below, or comes to the normal in twenty minutes after labor is completed, this in itself is indicative of impending hæmorrhage, and then prompt treatment of tendencies, especially referable to relaxation, demands the intra-uterine administration of remedies to control hæmorrhage. Ice, with uneven edges removed by immersion in hot water, carried to the fundus, and held until contraction is induced, or ice-water—if the surrounding parts are protected—by injection, or water of the temperature of 120° to 130°, by the same means, and persisted in until contractions are invoked. *Absolutely hot water favors coagulation in the uterine* sinuses, and in those nervously disposed, is a form of treatment suited. It is supposed that subcutaneous injection of ergotine has been used, or that ergot in the form of fld. ext. has been given in sufficient quantities. Antiseptic wool carried to the bleeding surfaces is to be used, and in the selection of remedies, there is the choice of dilute acetic acid, chloroform, or the mineral astringents. If a powder-blower is at hand, and the parts admit, the use of pulverized nut-galls will serve a goodly purpose, and is a safe means of arresting hæmorrhage. The application of tr. iodine is also efficacious, and can be readily applied on wool. Strength of the patient must be maintained, compensation for the loss of blood looked after, and to this end, injections of drachm doses of ether play a part, with the inhalation of nitrite of amyl, or the injection of stimulants. Alcoholic-saline intravenous injection gives back tension, and supplies, in part, the fearful waste. These failing, the abdominal aorta can be compressed, or the uterus held firmly by the hand sufficiently long to aid in the formation of coagulæ.

Discussion.

Dr. Davis: The doctor has not only opened the discussion, but he has so very thoroughly covered the ground that it leaves little room for any one to add anything, but rather repeat in the way of emphasis some of the statements he has made. There is one cause of post-partum hæmorrhage that I did not notice being mentioned, that is, the use of anæsthetics in labor. I believe it is the experience of all that the use of chloroform, or any other anæsthetic, in labor, is very liable to leave the patient in such a condition that the normal stimulus of the last throes of labor is removed, and a lassitude follows the removal of pain, so it is a question as to how to resort to anæsthetics. It is necessary to be very careful in following all the details the reader has mentioned, in regard to the pressing down of the uterus and holding it pressed, and keeping it in observation all the time until the patient has rallied, and I think where this precaution is not observed, there are many cases of hæmorrhage as the result; not always fatal hæmorrhage, but a hæmorrhage that would be avoided if these precautions were observed. The doctor has clearly outlined the magnitude and gravity of the diseased condition—because, in a great majority of cases, it is a diseased condition, a pathological condition, not a physiological one; and I know of nothing we are called on to attend, that so alarms physicians and attendants as this. I recall the words of old Dr. Meigs, when he so wonderfully demonstrated the condition. He would show us in so vivid a manner the accident; he would then mention the remedies to use, and he said after you have used these, you will throw up your hands and wish to the Lord old Meigs was there. I tell you, it has come to us all over and over again, when these patients seem, in spite of all remedies, to resist every effort to bring that uterus down; we do wish for help from any source or from every source. I would like to emphasize the hot water. It is one of the more recent ones, and it is one I have had experience with myself. In hæmorrhage, where I have felt safe, I have introduced ice rapidly, large quantities and satisfactorily, but not so satisfactorily, it seems to me, not so promptly and fully, as in the use of hot water. Most houses now, at least all well-to-do houses, have syringes of some kind, and if this water has been thoroughly boiled and cooled sufficient for the purpose, it is disinfected by that means, and I think can be used safely in large quantities, and its action in causing contraction is very prompt, and even where that is not so prompt, it does constringe the vessels, and at least the hæmorrhage is controlled.

Dr. Thomas: There was one place in the paper where the gentleman spoke of rupturing the membranes. Teachers of obstetrics advise not to rupture the membranes, but I hold and have always advocated such practice. I think after labor begins, the sooner the membranes are ruptured the better, and in a large practice of obstetrics, as a rule, I have followed it. To produce artificial labor the membranes are ruptured, so I hold that after the full period of uterine gestation has arrived, the membranes are in the road. There is one other point the reader spoke of, and that is to give large doses of ergot. Now I think that is a mistake. If you give large doses, you produce an exaggerated contraction, and if you have that, you necessarily have following an exaggerated relaxation, so that in giving it to control hæmorrhage, it is better to give small doses and give them oftener. If there is anything that raises large beads of sweat on a man's forehead, it is when he attends a case of confinement, and after the delivery or before the delivery, he hears the blood rushing out. There is nothing in the entire practice of medicine that impresses a man more than that condition. Now you talk about ice, you talk about syringes and hot water. If a man finds himself with such a case, how in the name of common sense is he going to run and get ice, inquire of the parties if a syringe is at hand, and if not, rush to the drug store and get one? The way the hæmorrhage flows out, if you wait your patient will be dead before you have these things prepared. Sometimes you can almost tell that a woman is going to have a hæmorrhage; I have done that more than once. Where I suspect there is danger of hæmorrhage, I take precautions beforehand to have a pint or two of vinegar. I do not tell this in the hearing of the patient, but I tell them I want a pint of vinegar and a clean kerchief or a small towel, and if I have hæmorrhage of that kind, I roll the towel around my hand, saturate it with vinegar, pass it up the uterus, and I have never failed to constringe the vessels and check the hæmorrhage.

Dr. Blume: The subject of post-partum hæmorrhage is certainly of importance to every physician. The doctor has fully given the different causes, as well as the treatment of this complication. I wish in the first place to call your attention to one point—to the question, Is it possible to prevent post-partum hæmorrhage? My answer is, the proper management of the third stage of labor will render these accidents extremely rare. Unfortunately, there is still a diversion of opinion as to what is the proper treatment in the third stage of labor. Some writers say the uterus must be grasped and firmly compressed as soon as the head emerges; some insist upon compressing the fundus as soon as the child is delivered. Some say it must be done about fifteen minutes after the delivery of the child; still others leave the separation of the placenta and its expulsion through the contraction-ring to the powers of nature. If you do this, you do not need to be afraid of post-partum hæmorrhage; there will be very little blood lost under these circumstances in a very great majority of cases. It would lead me too far to demonstrate to you that this last view is the correct one. The observer will find that there is very little loss of blood, in some cases almost nothing; he will also find that the uterus remains more contracted if this plan has been followed.

As Dr. Thomas said, ergot, especially large doses of ergot, has the effect of over-stimulating. About three or four years ago I published a paper on this subject, and especially about the third stage of labor. I have not had one case of post-partum hæmorrhage within the last eight or nine years, since I have been following this plan of the third stage of labor. I say of post-partum hæmorrhage, and I exclude all those hæmorrhages which arise from lacerations. As regards the treatment, I again agree with Dr. Thomas, that it is often impossible to use cold or hot water. You have not the time to do it. If it is some mild form of hæmorrhage, compression of the fundus will arrest it; if it is a serious hæmorrhage, you lose too much time before you have it ready. If I had it to do, I would simply introduce my hand into the uterus, take the other hand and grasp the fundus and make a compression of the uterus. I think very few cases will resist this treatment. The best result has been obtained in various cases by tamponning the uterus and vagina with iodoform gauze.

Dr. Batten: I venture to say that if any of us had a case of post-partum hæmorrhage to-night, we would not likely do anything that has been recommended, because we have not the appliances nor have we the time to wait. I believe that the husbanding of the second stage of labor to prevent post-partum hæmorrhage, is as important, if not more important than the third stage of labor. In my career I have had but two cases of post-partum hæmorrhage. One was not a very bad case. The other was a very bad case, and the woman finally died. I was not there at the time the child was born, nor for an hour afterwards, and when I arrived at the patient's side I found her *in articulo mortis*. I had attended her in three previous births. In another case of post-partum hæmorrhage, a case I saw with another physician, we governed the bleeding by each alternately holding or pressing the womb well down in the pelvis and giving ergot. The moment either of us would take the hand off the uterus it would become flabby. I am a great advocate of the rapid delivery of the afterbirth when the second stage of labor is complete. It is very important that the clots and all the membranes that might remain in the uterus be removed, and that the womb should be well contracted before putting on the bandage. I would object to giving ergot in any shape, either by injection or by the mouth before the child is born, because I think it would lead to difficulties afterwards that might otherwise be avoided.

Dr. Kœnig: I want to say a word in favor of that much-abused remedy, ergot. According to my understanding, the difference between ergot and the natural contraction is that the contraction by ergot is continuous. If you get the uterus contracted by large doses of ergot it does not relax. I myself have seen very few cases of serious post-partum hæmorrhage. I am sure, however, that if I had ergot at hand, I would give at least half an ounce of the fluid extract as soon as the manual manipulations should have succeeded in bringing about contractions, and time could be spared to administer the medicine.

Dr. MacFarlane: There is just one thing I wish to speak of—the matter of ergot. It was thought it should be given in all cases, and I think there are those who rely upon ergot to the exclusion of other things. I agree with Dr. Brume that the proper way of treating a post-partum hæmorrhage is to induce contraction of the uterus by the introduction of one hand into the uterus and placing the other one upon the fundus. I think the presence of the hand in the womb is sufficient. There is one thing I wish to commend to those who have not done much such work, that the doctor has made mention of in this paper, that is, the significance of a quick, rapid pulse. Though quick and rapid you may not have a post-partum hæmorrhage in the true sense of the word, but you are going to have a uterus that will relax again and fill with clots and give you trouble; and there are those who give ergot under these circumstances, and especially beginners will give the patient a dose of ergot. The proper thing to do is to empty the uterus with a few fingers, and usually the contraction will be sufficient to check such hæmorrhages without any ergot at all. Mention has been made of the binder, and I know people who put it on with as much regularity as they say their prayers at night. I think with the average woman, by the time you raise her up and have that binder put underneath her, you will do more harm than good. Even in hæmorrhages of any kind, it is not a custom with me to put on the binder. Once you have the uterus contracted, and you remain by your patient a length of time to assure you it is permanent, I do not think there is any occasion for the binder. Dr. Thomas has stated here that the proper thing to do under any and all circumstances, if full term has arrived, is to rupture the membranes. I wish to take exceptions to it. A labor can be carried through to such time as it will rupture of its own accord, with much more comfort, and it is certainly easier on the mother's part to have a soft bag than a resisting bag.

Dr. Murdoch: No man should introduce his hand into the uterus, unless for some such grave accident as this post-partum hæmorrhage, and only then when the post-partum hæmorrhage threatens to be fatal. I mention this because the matter was vividly brought to my mind last night by a young practitioner, who told me that two weeks ago he attended a case in which there was post-partum hæmorrhage, and for the purpose of arresting it he called for a syringe, and he injected it with hot water and arrested the hæmorrhage; but in a few days the woman was taken with fever and died within a short time, of septic poison. Now, if this goes abroad that in cases of post-partum hæmorrhage, the practitioner is at liberty to take a cloth or towel and wrap it in his hand and saturate it with vinegar and push it into the uterine cavity, practitioners who have not had as much experience as Dr. Thomas has, get to think that is the proper course to pursue. Some of them may think that the loss of a few ounces of blood after delivery justifies them in the use of some such means to arrest the hæmorrhage, and they may for a trivial trouble introduce that into the system of a woman which may cause her death. It is a serious matter to introduce the hand into the uterus, and in injecting hot water in a hurry, nine times out of ten you will not get water that is boiled, but that which is filled with septic matter; and you may for the purpose of arresting a hæmorrhage that will not prove fatal, inject it in the system and probably cause the woman's death. I believe that, generally speaking, the hæmorrhage can be arrested without such means, but there are occasions where it is probably justifiable, and I have myself resorted to it. I am a believer in hastening the third state of labor; I believe in doing it according to the method of Crede. I also agree with Dr. Macfarlane that the binder is an obsolete means of producing pressure, and is not worthless, but worse than worthless—it is a nuisance.

Dr. Duff: I cannot help allowing the words of Prof. Hersh to ring in my ears. "Where a second case of post-partum hæmorrhage follows a man, he is certainly ignorant or guilty of negligence." When I say this I do not for a moment entertain the belief that cases of post-partum hæmorrhage are not a necessity in almost, if not every man's practice; not inevitable, but they should not be frequent, if proper precautions are taken. There have been remarks here to-night suggesting the impossibility of having proper instruments at hand. One certainly has a right to speak disparagingly of a physician who goes on his round day after day and night after night, waiting on the mothers of our land, without having himself provided with those instruments and remedies which may become necessary in the course of his practice, without time to run around and hunt them up, and hence while a physician does make a very great display when he has a table in the room and places his instruments upon it, which I would condemn to a certain extent, he is certainly practicing obstetrics according to the line of his duty, in being prepared for emergencies. Coming to the subject of post-partum hæmorrhage directly, the doctor did not illustrate the difference between the different characters of post-partum hæmorrhage, and in the discussion almost all have spoken of post-partum hæmorrhage which comes from the detachment of the placenta. Hæmorrhages from laceration are of different character, and it is very important that we recognize this difference. I know of a woman who died not five miles away from here, because her physicians did not recognize the fact that the hæmorrhage they were endeavoring to control did not come from the uterus, but from laceration. They kept the uterus pressed down, kept it contracted and applied lemon juice and hot water, but the hæmorrhage went on and the woman died; whereas if they had recognized the true condition and taken hold of that uterus and sewed the rent, they could have saved her in all probability. Now, with regard to the treatment, the doctor did not distinguish between contraction and retraction, as an element in post-partum hæmorrhage. We have contraction and retraction, and if you have plenty of contraction and not any retraction, you will still have hæmorrhage from the uterus. With regard to the use of ergot, it will produce contraction, but it does not produce retraction, either of the muscles or the blood vessels, and when the contraction passes off, not having retraction, you are a little more likely to have hæmorrhage than if you had not given ergot.

There are some methods of treatment of post-partum hæmorrhage that have not been mentioned. The condition of the patient must be taken into consideration, as has been stated by some one, outside of the condition of the uterus. If hæmorrhage came on, I would take the forceps and pull the uterus down, and with a pair of forceps I would take gauze and push it up into the uterus, and the hæmorrhage in ninety-nine cases out of one hundred would cease. I would never hasten to turn the uterus inside out as do Koch and others. Another thing to be done is to make pressure. I believe Beringer and Foster advocate pressure upon the abdominal aorta, one through the uterus and the other the abdominal walls, and forcing all the blood that remains in the woman's body up to the brain as much as possible. The subject is a very interesting one to me, and I feel of all the operations we undertake there is none in which we must be braver, bolder and more determined and more active.

Dr. Williams: I do not intend to take much of your time. In regard to the criticism of Dr. Thomas, I did not state any dose of ergot; all I suggested was the injection of ergotine, when we anticipated in a few minutes to half an hour labor would be over to get the effect of ergot. In regard to the use of ergot, I am a firm believer in its value, that it will produce contraction. Some criticisms have been made on the binder. I mentioned that after you were assured that you had permanent and constant contraction, the application of the binder would more firmly hold the uterus to its place, not to immediately apply the bandage.

Dr. R. H. Daly, of Pittsburg, read a paper entitled

LEPROSY.

Dr. Daly said with the permission of the Society, he would make some remarks upon the subject of Leprosy. He had last March, through the courtesy of the experienced and efficient Harbor Physician, employed by the Marine Hospital Service of the United States, at Havana, Cuba, Dr. Burgess, been enabled to examine nearly one hundred cases in the hospital for lepers, in Havana, and while he was more particularly interested in the phases and effects of the disease upon the structures, and functions, of the naso-pharynx and larynx, and other air passages, and also in the study of the fresh and recent cases, yet a general study of the disease made itself felt as one of unusual interest to him, since he with the great mass of busy practitioners of medicine, had before that time only a vague idea of the clinical features of the disease, and had never in the whole course of his professional life examined carefully a case of leprosy. He would venture to say that probably 90 per cent. of the medical practitioners of the United States could neither describe the disease in many of its protean forms or diagnosticate a recent case if they saw it for the first time; hence, the desire on his part for an opportunity for object lessons, the most potent of all lessons.

The time had come when the National or State Legislators ought to take some adequate action to prevent the ingress of lepers to the United States, and also to forcibly isolate those already within our borders. It is therefore the duty of the profession to instruct the Legislators, and the public, upon this question. And it is a matter of congratulation to Pennsylvanians that their State Board of Health had recently sent to the profession circulars making inquiries for the purpose of legislation, and it is to this end that he would give some views and observations briefly. But the profession could do little or nothing without the public, who are indebted to the unselfish recommendations of the medical profession for their light and life in matters of public health, by the recommendations of the latter for the stamping out of preventable diseases; hence, the public ought to be informed as to the needs of the hour, and urged to act through their representatives.

An eminent dermatologist, and valued friend, Dr. L. Duncan Bulkley, of New York, had recently expressed doubts, before the New York Academy of Medicine, as to the contagiousness of leprosy, and Dr. Daly read the published paper with some apprehension as to the effect of the expressions of so distinguished an authority upon the profession, and there were some statements made by the doctor that ought to receive further discussion.

Dr. Bulkley said that English observers were positive that not a case of communication of the disease had ever taken place there (in England). This, upon reflection, can scarcely be taken as an argument of any weight against the contagion, as great care has always been taken to isolate leprosy in the countries comprising Great Britain, and to that persistent isolation must in a great measure be attributed, not only the stamping out of the disease, but the prevention of contagion. Some light may be thrown upon the ancient habit of isolation by quoting an historical authority, which says:

[1] "The 'Mickle ail,' or great disease, the leprosy, which the learned call tubercular elephantiasis, prevailed in nearly every district of Europe from the tenth to the sixteenth century.

"Scotland suffered from this hideous scourge as well as other countries. It was brought, as some historians write, from the East by those who returned from the crusades. But this cannot be, for there were leper hospitals in England before the crusades began. The disease lingered in the northern islands of Scotland long after it had disappeared from all other parts of Britain.

"The lepers appear to have been sent to the island of Papa."

The parish of Walls had lepers to support in Papa as late as the year 1740, as the books of the kirk-session show. In 1742 Walls held a day of public thanksgiving for the supposed final deliverance of the country from the leprosy. But there is little doubt that cases of true leprosy were to be found in Shetland up to the close of the last century.

When leprosy seized its victim, the eye-brows and nostrils became swollen, and the countenance dusky and glossy, with a fixed look and an expression of terror. Livid pustules broke out on the face and body; the hair fell off; the voice grew hoarse and hollow. As the hideous disease advanced, ulcerating tubercles discharged a foul matter, dark scabs formed, and the face looked like a piece of rotten cork. A sense of weight and weakness oppressed the limbs. The fingers and toes mortified and fell off joint by joint. Corruption by a frightful anticipation, began its work without waiting for the grave.

The large number of victims were no doubt found among the lower classes of society, the bondmen, the poorer tenantry, and the humble dwellers in the towns. But neither age, nor rank, nor sex was spared. The disease must have been very common in old Scotland, for every town was obliged by law to possess its leper hospital. Every hospital was bound by Papal "bull" to be provided with its own churchyard, chapel, and ecclesiastics. Saint Anne was the patron saint of the lepers, and a chapel dedicated to her was frequently connected with the hospital. The leper hotels were not intended as places for the medical treatment of the disease, but merely for the separation of the diseased from the sound, lazarettos where the infected performed a life-long quarantine. They were for the most part founded and endowed as religious establishments, and were generally under the rule of some neighboring abbey or monastery. The inmates, doleful creatures, were expected to offer up daily prayers for the souls of the founder and his family. An order of Knighthood —the Knights of Saint Lazarus—was instituted about the time of David I, for the care of lepers. Knights of this order are said to have been common in Scotland and France. What kind or extent of power these knights were allowed to exercise over the lepers and leper houses, is not known. Every person seized with leprosy within the walls of a town was removed at once to the hospital. If he had nothing of his own a collection of twenty shillings was made for his behoof. He who sheltered or concealed a leper even for a single night was heavily fined.

Some of the Scottish leper houses had large properties attached to them, and must have supported their inmates in all the comforts of which the unfortunates were capable. Others were but slenderly provided, and their miserable inhabitants were obliged to depend upon charity. The act of Parliament "anent leper folk," passed in the reign of James I, ordained that "no leper folk sit to beg, neither in kirk nor kirkyard, nor other place within the burghs, but at their own hospital, and at the gate of the town and other places outside the burghs." They were allowed to enter towns for the purchase of necessaries only on Mondays, Wednesdays, and Fridays, from ten till two o'clock, on condition that they wore a cloth on their faces, and rang a hand-bell or "clapper" to give warning of their presence.

The leper hospital at Greenside, Edinburgh, was founded in the year of King James' marriage to Anne of Denmark. The money for the building was given by John Robertson, merchant in Edinburgh, and others, in fulfillment of some vow. At the opening of the hospital five leper inhabitants were consigned to it. Two of the wives of these lepers voluntarily shut themselves up in the hospital with their husbands.

The rules of this hospital were probably more severe than those of other leper houses. The inmates were forbidden to go beyond the gate by day or night, work-day or holiday, on pain of death. At the gable of the hospital stood a gallows in perpetual readiness for hanging any leper who might venture forth. The rules of the house enjoined, "That the said persons and each one of them live quietly, and give no slander by banning, swearing, fighting, scolding, filthy speaking, or vicious living or any other way, under the pains to be enjoined by the (town) council. That there be appointed an ordinary reader to read the prayers every Sabbath to the said lepers, and a commodious place appointed to the said reader to that effect."

By this time, it would appear that the disease was on the wane, for in little more than sixty years after the opening of Greenside leper-house, the magistrates ordered its roof to be taken off, and the wood and slates to be used for repairing the town mills and other public buildings. The stones of the edifice itself, and of its garden wall, were applied to similar purposes.

A leper was held to be a man dead in law. He was incapable of inheriting, and lost all his civil privileges.

On the day that he was put into the hospital, the burial service was performed over him. A priest in surplice and stole went to the lepers, and began the dismissal ceremony by exhorting him to suffer with patient and penitent spirit the incurable plague with which God had stricken him. He was then sprinkled with holy water, and conducted to the church, the usual funeral verses being chanted on the way. Arrived in the church, the ordinary dress of the leper was taken off. He was then wrapped in a funeral pall, and placed corpse-wise before the altar on two tressles, while the mass for the dead was sung over him. After this he was again sprinkled with holy water, and led to the hospital. A clapper and "cop," or bell and dish, a stick, a cowl, and a leper's dress were given him. Before leaving him the priest solemnly interdicted him from appearing in public without his leper's garb—from entering inns, mills, churches and bake-houses—from touching children or giving them anything which he had touched—from washing his hands or anything that pertained to him in the common fountains or streams—from touching in the market the goods which he wished to buy with anything but his stick—from eating or drinking with any others except lepers—from walking in narrow paths—from answering those who spoke to him in the roads or streets, except in a whisper, that they might not be annoyed with his pestilent breath and his infectious smell. Last of all, the priest closed the ceremony by casting a shovelful of earth on the leper's body.

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[1] Rev. Jas. Mackenzie's History of Scotland, Published by Nelson & Sons, 1890.

By the foregoing it will be seen with what care lepers have always been isolated in Great Britian, and to what causes the presence of the disease and contagion is so rare.

Now, touching upon the case of the death of Father Damien from leprosy, while engaged among the lepers. Dr. Bulkley quotes the doubts of Dr. Rigg, of Trinidad, concerning the contagiousness. while he also expresses his own, yet he says in the course of his paper, Father Damien "may have imbibed the leprosy germ in water, food or air," but he thought the probable source of the infection was through mosquito bites.

For all practical and hygienic purposes it is quite needless to differentiate between contagion and infection. Sufficient for either question if admitted, is segregation, and all other quarantine measures to stamp out the disease.

The *New York Medical Record* says editorially in its issue of Jan. 23, 1892, "There are not many lepers in New York, but there are too many." It is needless to say that from Pittsburgh alone, there are at least fifty persons who visit Havana, Cuba, during every winter, and from Pennsylvania there are probably 200. The laws concerning isolation of lepers in Havana are disgustingly and perilously lax. Many years ago there was a wealthy leper who died in Havana, and who endowed a hospital for these unfortunates. As a part of that hospital there is a spacious shrine, or church, where inmate lepers and outside citizens meet Sunday after Sunday to worship. True, the lepers are not generally allowed outside the iron grating of the porch, but they sit inside in crowds, and traffic in the closest possible proximity, and talk at will with their friends and loungers on the spacious steps, through the iron bars. Little children in crowds play about them on the steps, and witness the public swimming of the horses in the surf in front of the leper hospital, and, during several of my visits, a game of base ball was going on in front, and the usual crowd swarmed as lookers-on upon the hospital steps.

The public are admitted to worship in the lepers' church without restraint. At my visits the lepers gathered around me closely, and many offered freely to exchange their small and filthy paper money for silver, all willing to submit to any professional examination in their earnest desire to get relief. It is needless to say that the infected paper money finds its way into the pockets of the general public, and becomes a fertile source of contagion and infection.

Doctor Daly had been interested in the case of Joseph Miller, one of the survivors of the massacre of the crew of the filibustering ship, Virginius, in 1872, who was a leper inmate of the hospital. His name has been corrupted into Amelio by the Cubans. At the time of his rescue, he was a hale and hearty dark mulatto, but thirteen years of leprosy had turned him white; it has also made him handless, footless, sightless, noseless; it has left him without ears; it has left him without what would be recognized as a human voice; it has left him a hideous, ghastly creature, without hope in life; a mere thing, whom to look at is to make the stoutest heart shudder; whom to touch is to take the greatest possible risk of a contagion that is sure to destroy. And such destruction. No other cruel thing known is so cruel, a weary journey of years, with weary limbs over which there is no power; shunned as no other being is shunned, cast out as unclean, to await the day when the horrible, hideous mass of decay will cease to live.

Whatever be the pathology of leprosy, there can be no doubt but what it is a disease affecting nutrition, and which does its deadly work by absorption or ulcerative absorption of the tissues. For example, in the early cases, there will be seen on close inspection, a slight tumefaction of the skin and cellular tissue at a point on the ear, or nose, or limb. Later on there will be a gradually encroaching constriction at or near the point, and a slow absorption or amputation of the member or part. In some other early cases there is a strange alteration in the countenance and plaques of skin on the face and body, altered and bleached, or rendered livid by defective nutrition, or local inflammation.

The uninitiated might suspect syphilis, but when once seen and studied in its manifold forms it can scarcely be mistaken. The limits of time and the subject announced, as the order of this meeting, prevented Dr. Daly from going further into this subject at present.

(To be continued.)

The Medical Society of the Missouri Valley.

Tri-Session of the Fourth Year held at Leavenworth, Kansas, March 17-18, 1892.

First Day—Evening Session.

(Continued from page 427.)

Dr. O. B. Campbell, of St. Joseph, Mo., read a paper entitled

MODERN THERAPEUTICS.

In this age of rapid progress, when every conception of the human mind must mature with electrical rapidity, when discoveries of to-day are known in every part of the world to-morrow, is it any wonder that therapeutics should undergo such wonderful advancement? Modern therapeutics, however, are advancing, it seems to me, rather out of proportion with the other branches of medical science. New remedies, as discovered by chemists, are finding a too prominent place among the therapeutic agents of the average physician, to the exclusion of the older, time-tried remedies. I do not advocate simple empiricism alone, yet to my mind empiricism must be given its proper place; remedies must be well tried upon the human organism, in order to ascertain their physiological effect. Without this there can be no true advancement. It would seem that our manufacturing chemists are not only racking their brains in a search for new remedies, but, after their discovery, the physiological action is as soon known by them, and the class of diseases for which they are used are as quickly enumerated, tabulated, and samples of the remedy sent free to every physician in the land. I do not wish to condemn altogether the manufacturing chemist, as I am aware that, in the last few years, many new remedies have been discovered, which have proven valuable acquisitions to therapeutics. Yet I wish to call the attention of the profession to what I believe to be a dangerous, unscientific course that is being pursued by them, and if viewed in its proper light, it places the profession in very nearly the same position as the laity in general hold to the advertised patent medicine. The plan pursued by the manufacturing chemist is, no doubt, familiar to all of you. When a remedy is discovered, or a new compound originated, then it is christened, its properties briefly stated upon the wrapper, the many diseases it is successful as a remedy in, are enumerated, and then, to make it palatable for the profession, its formula is given; this acts as a kind of sugar-coating, and the profession, on the strength of knowing the formula, can intelligently prescribe it.

About two months ago, a bright-looking young gentleman called upon me at my office, and in a self-assured, business-like manner, he informed me that he was a representative of the Melier Drug Co., of St. Louis; that he wished to present to me a physician's sample of Ponca Compound. Said he: "You will find this to be a great uterine tonic and sedative, and it is being used extensively by physicians everywhere." He said he hoped I would give it a trial. I accepted the proffered sample box. Upon the top of the box was printed in large letters, "Physician's Sample Ponca Compound." Uterine alteratives especially affecting the mucous surfaces. I turned the box over; upon the bottom it read: Ponca Compound, for metritis, endometritis, subinvolution, menorrhagia, leucorrhœa, dysmenorrhœa, ovarian neuralgia and inflammation. Checks threatened abortion and miscarriages, restores suppressed menses from cold, removes painful symptoms of pregnancy, relieves after-pains and favors involution. *Upon one side* of the box it gave the following formula. Each tablet contains:

Ext. ponca, gr. iij.
Ext. mitchella ripens, gr. j.
Canbaphylin, gr. $\frac{1}{4}$.
Helain, gr. $\frac{1}{8}$.
Viburnum, gr. $\frac{1}{8}$.

I read and reread the formula. Singly, the therapeutic agents enumerated were devoid of any particular physiological action. As a compound, I wondered whether it was due to the proportions, that it possessed such a wonderful physiological action; or was it due to some chemical change? I was at a loss to know how a remedy could control after-pains, and yet favor involution. I would briefly enumerate a few more of the innumerable compounds that are sent out for physicians to use: Elixir Vigorans, as prepared by the Vigorans Chemical Co., of New York and St. Louis. The formula contains the hypophosphites of calcium, potassium, sodium, iron magnesium, quinia and *nux vomica*, erythroxylon and, as stated, various adjuvants. Viburnum Compound—the formula of Dr. Hayden. A venerable-looking gentleman called upon me a few days ago, and presented me with a sample bottle Viburnum Compound, as prepared by the New York Pharmaceutical Co., of Massachusetts. Upon one side of the wrapper *this astounding information* appeared: "As a reliable uterine tonic, antispasmodic and special remedy for dysmenorrhœa, menorrhagia and female debility, it is without an equal in the materia medica for giving immediate and satisfactory results. No special caution required in its administration." Upon the other side it read: "Employed successfully in bilious colic, spasms, hysteria, cramps, diarrhœa, cholera morbus, cholera infantum, cholera, and all internal pains of the stomach and bowels. For valuable formula, properties and uses, doses and the testimonials of twelve hundred well-known physicians, see hand book." I suppose it is hardly necessary for me to call your attention to the absurdity of such vaunted claims. It does seem to me, that such pretentious, imaginative, absurd claims as regards these preparations, or I may say, any therapeutic agents, can only be based upon a profound ignorance of pathology, or it is an intentional fraudulent claim for financial gain. The criticisms that I would make of the profession are, first, that they will quietly submit to such unscientific methods on the part of the manufacturing chemists; second, that so many will make use in practice of any preparation that is brought out; and last, but not least, the giving of testimonials. It seems to me, that a certain class of physicians are anxious for self-aggrandizement, that they love to see their names appear in print. The evil arising from this method of quackery, which is growing every day, is to greatly bar *the true* progress of therapeutics, and to wonderfully increase mortality. Imagine a physician depending upon Ponca Compound as a remedial agent in puerperal metritis, to the exclusion of remedies whose physiological action is known. Further, has any physician ever ascertained the physiological action of the compound? Is it enough for the Melier Drug Co. to have printed upon the bottom of the box the diseases the compound is good for? Must we follow *their dictates, like sheep?* The methods pursued by the manufacturing chemists and the support they receive from physicians are, as I firmly believe, as unscientific as the methods of the ordinary quack medicine vendor. The *manufacturing chemist* has *improved upon* our fluid extracts and tinctures, and has improved upon the manufacture of pills, so that they are more soluble. He has discovered new remedies, thus far and no farther can his labors legitimately extend. It is *time for the profession* to call a halt, and discontinue this encroachment upon professionalism. If manufacturing chemists will persist in endeavoring to educate the profession, in the application of therapeutic agents, and no halt is called, the effect will be dangerous; it is a simple acknowledgment upon our part that they are capable of doing so. If this be true, then there can be no science in the practice of medicine. Imagine a materia medica treating of the physiological action of these innumerable proprietary compounds, and the class of diseases in which they may be used. Medical journals are largely responsible for this wholesale quackery; entire pages being devoted to the advertising of compounds and proprietary new remedies! All that is necessary for a manufacturing chemist to do, in order to bring his compound before the profession, is to largely advertise in medical journals, send samples to physicians, and its success is assured. Can we, as scientific physicians, prescribe proprietary compounds, without any knowledge of their physiological action? The majority of testimonials that are given by physicians are from a set of medical quidnuncs, whose ability to ascertain a *true* physiological action must be questioned, and who are more interested in advertising their individual selves than the remedy.

The first scientific principle in medicine is a diagnosis. This requires on the part of the physician, a knowledge of the anatomy of the human body, particularly of the part affected, and then the methods necessary to arrive at a proper *conclusion*; after this we must understand the pathological *condition*, the state of the organ, or part affected, and the process by which the organ or part is rendered *in* such a state. Then a knowledge of physiology that, through the different systems, we may apply a remedy to reach the condition. After a theoretical knowledge of this kind is obtained, then still in order to be able to prescribe a remedy, or put in use our knowledge, we must have practical experience. Now then, surely *manufacturing* chemists cannot lay claim to this knowledge, and yet, without this, they will dictate to the profession, and originate compounds for us to use. Since the discovery of antipyrine, innumerable coal-tar preparations have been placed upon the market by the manufacturing chemist; at the present time it seems that every manufacturing house is trying to invent a new one of these preparations, the composition of which is known only to themselves. The full physiological action of the coal-tar derivatives is not known; however, this much is known, that they are, the most of them, heart paralyzers, they depress the vaso-motor center, lower blood pressure, and further diminish the ozonizing power of the blood. This is the probable action of the coal-tar preparations as regards their *antipyretic* powers. Physicians are making use of these preparations regardless of the condition of the heart, and in continued fevers where the heart often needs stimulation. The therapeutical agents of the average physician to-day are the coal-tar preparations, and very many proprietary compounds, while the time-tried remedies are but little used. I do not condemn new remedies, but I would advocate a thorough study of the physiological action before they are made to replace known remedies.

It may be that my criticisms upon the course that modern therapeutics is taking, and the part played by the manufacturing chemist are untimely, and will not meet the approval of the profession. But surely if we wish to uphold the dignity of our profession we must discountenance the methods of the manufacturing chemist, the use of proprietary medicines, and the giving of testimonials by physicians.

Adjourned.

Second Day—Morning Session.

The Society was called to order at 10 A.M. The first paper was by M. F. Weyman, M.D., St. Joseph, Mo., entitled

FUNGUS CHALAZICUS, A NEW MICRO-PARASITE.

It is natural for physicians to consider a tumor developing in the passage of a secreting gland a simple retention cyst. When, however, careful examination by means of the microscope has shown the fallacy of such an assumption, mere inference no longer has a right to judge. Still, even in science, the general acceptation of well-proven facts is often an exceedingly slow affair.

The little tumor known by the name of chalazion, and developing in the Meibomian glands of the eyelids, is a fair illustration of this statement. Although Virchow showed, many years ago, that it is a cysto-plastoma, it still figures in many of our modern text-books as an ordinary cyst. Virchow's nomenclature with reference to this little neoplasm is undoubtedly well chosen, but the term granuloma, at first proposed by Dr. Thomas, of Tours, seems preferable to me.

The name is a full description of the pathological anatomy in one word. The microscope reveals a fibrous capsule, which is probably derived from the membrana propria of the gland. No secretion is found in its cavity, but in its stead we meet countless numbers of lymphoid cells. The latter are embedded in a fibrillated matrix apparently derived from coagulated plasmatic material. In fact, in the central portions fibrillation is often absent or only slightly marked.

From the various parts of the capsule spring strong fibrous bands subdividing the main cavity into numerous irregular spaces. The resemblance suggests *grosso modo* the structure of a lymphatic gland, but the absence of the small final trabeculæ does not carry out the comparison. The vascularization is not very abundant, but considering the avascular structure of cartilage we need not wonder at that.

The appearances outlined above class the tumor at once as a granuloma.

Thin sections over stained in carmine and then decolorized by acids afford beautiful pictures, and make the subject plain at a mere glance. It might be well to mention that small tumors furnish the best material. They give a view of the totality of the tumor, are more readily hardened, and present a center less brittle and, therefore, less liable to drop out. The fact that some chalazia present gelatinous or fatty contents is no objection, for we all know how easily granulation tissue (especially the *caro luxurians*) undergoes degenerative metamorphoses.

Strange to say, the discovery of the true pathological anatomy caused considerable embarrassment as to the etiology. We all know that unhealthy granulations imply continual irritation for long periods. Many, among them De Wecker, thought that the retained secretion might cause irritation, but in the very suggestion you can read the doubt in the author's mind. In the first place, no secretion is found in the tumor and, furthermore, secretion-plugs do not cause granulation tissue elsewhere. This is well illustrated in the case of atheromatous tumors, so frequently observed on the scalp. As another possible source, De Wecker mentions blepharitis marginalus, by which granulations might be formed at the mouths of the excretory ducts of the Meibomian glands. From this location they might readily extend upward into the glandular follicles proper. This sounds reasonable, but when we consider that many persons are troubled with chalazia without ever having had blepharitis, this view also is unsatisfactory.

With these considerations I went to work in the study of this neoplasm. The result was the discovery of a fungus, which at once explains the whole subject.

The first thing I noticed were numerous spores which appeared in the sections. They were situated in the capsule and the tissue adjoining it. Toward the center they became fewer in number. Many were seen floating free in the field. Also mycelial branches seemed to penetrate through the capsule. Knowing that spores readily develop in straining fluids and that thin fibrous tissue might simulate the appearance of hyphæ, I began a systematic search for the mycelium. After many disappointing trials I succeeded in locating small fragments; they looked like very long and thick bacilli and could be made out only with dazzling lamp light. Focussing showed that these little rods were not only on the surface of the section, but they would come to view successively through its whole thickness. The transmitted light assumed a bluish or greenish tinge, just as in the case of bacilli. In my mind everything was proven, but I felt the difficulty of convincing others, unless I could show a larger part of the mycelium in its entirety. Moreover, the methods followed out so far did not admit of easy confirmation. I therefore looked about for an easy and decisive *modus demonstrandi.*

I used a solution of caustic potash (one part of the hydrate to two of water), and put a section in a few drops of this reagent. A cover glass was put on next, and the whole thing warmed for a few seconds over the lamp. After this the preparation was watched under the microscope, at a small inclination of the body. A little blotting paper took up the flowing reagent.

The sections readily dissolved and disappeared before my eyes, leaving the fungus behind. Gentle washing removed the detritus, while a slightly acidulated current cleansed away the last tissue fragments, and also the hydrate of potash. A little magenta readily stains the fungus, the tincture could not make plainer a thing already so plain.

The washing could be done gently, or else the current might wash away fungus, tissue, and all. The mycelium should not be displaced at all, for, whenever it moves on, it takes a kind of rolling movement, and in this manner all its filaments form a thick cord-like mass, in which details cannot be demonstrated without continual change of focus. The best view can be obtained during the action of the alkali, for here the relation of the parasite to the tissue is thoroughly exposed. Often hypha after hypha shows up below and within the tissue, as the latter is dissolved by the caustic.

The sporangia are represented by irregular terminal masses on the filaments, showing numerous spores embedded in its substance; the filaments are of two kinds, the thin and the thick, with the latter greatly predominating. Of some fifty sections taken from three different tumors, every one showed the parasite without fail. From this, I think, the chain of evidence is fully established. Actual cultivation had to be excluded on account of lack of material.

Conclusions.

1. Chalazia are not retention cysts, but true granulomata.
2. Their appearance in large numbers and in successive periods suggest a parasite etiology.
3. Their ready reproduction after removal, also points in that direction.
4. The growth of granulation tissue pre-supposes a long-continued irritation of a low grade.
5. A fungus can be demonstrated in chalazia.
6. The "fungus chalazicus" fully explains the etiology of the neoplasm, giving the *causa originis* of the local irritation and of the granuloma resulting therefrom.
7. Hordeola often preceding chalazia, and also having many characters pointing to their parasitic origin, might possibly be caused by the same fungus.
8. The *typical* chalazion must be considered a neoplasm, due to parasitic causes; still, the possibility of a mere retention-cyst cannot be denied, however rare such an occurrence might be.

(*To be Continued.*)

Chicago Medico-Legal Society.

March 5, 1892.

The secretary read a paper by Dr. Richard Dewey entitled:

SOME ILLUSTRATIONS OF THE WORKING OF THE PLEA OF INSANITY IN CRIMINAL PROSECUTIONS.—A PLEA FOR BETTER REGULATION OF EXPERT TESTIMONY.

The plea of insanity, as a defense in criminal prosecutions, has from time to time been the subject of much discussion, and is still worthy of attention for the reason that a state of affairs exists which confessedly needs a remedy. In the limits of this paper it is proposed to speak only of cases where the insanity plea has been used in a manner calculated to arouse suspicion as to the propriety or honesty of its use. That there have been large numbers of cases in which persons committing crimes have been allowed wholly to escape from any penalty by urging the plea of insanity is well known. Such of these cases as are the result of sympathy on the part of the jury, with a wronged husband or with a person committing a crime under highly extenuating circumstances, may be omitted from present consideration, and only those cases where all would agree that the ends of justice have been defeated, need now occupy our attention; furthermore, the especial end now sought is the illustration of the manner in which justice is defeated by the methods of legal procedure in relation to introduction of so-called expert testimony, which is misleading to court and jury.

It is believed that the present evils will exist so long as the present method of obtaining testimony continues, namely, that of permitting each side in any given case to procure as witnesses whomsoever they list and, in effect, offer a reward for unscientific and untrue evidence, on the part of those who are willing to make merchandise of their knowledge and reputation. There are also circumstances connected with the present system of calling expert testimony which tend to warp the judgment and opinion of experts whose intentions are honest, as matters of theory and opinion differ so greatly from matters of fact. The insanity of an individual, in a given criminal proceeding, is a matter of opinion as distinguished from ordinary matters of fact which are capable of demonstration to the ordinary mind, and the value of an opinion to a jury depends upon the individual giving it, and also oftentimes on the circumstances under which it is given. There could be no stronger condemnation of the present system of admitting expert testimony to courts than that, which is recorded of the utterances of eminent judges, in all parts of our land,[1] and it would appear that an urgent need exists of doing away with a feature of criminal proceedings, which is admitted by all to be scandalous, by some method which would procure expert testimony, before the court and jury, from sources above suspicion.

The manner, in which this object may be accomplished, is one for lawyers and legislators to discuss, but the essential object to be attained should be the summoning by the court itself and not by any party to any litigation, of persons capable of giving expert advice and assistance without reference to its bearing upon any personal interest, which should be authoritative and open to no doubt, either of dishonesty or incompetency.

When closing this paper, I will endeavor to speak somewhat more in detail, but will now endeavor to present facts, in reference to cases which have come to my knowledge, as medical superintendent of a State insane hospital, illustrating the evasion of the law by the plea of insanity, under circumstances of greater or less suspicion, as to its genuineness and propriety.

The following cases will serve to illustrate and amplify my meaning:

I. Case No. 4,247.—Male, admitted October 17 1890, age 28. The history of this patient was briefly as follows: he had committed frequent infractions of the law and was under indictment for burglary and house-breaking at his own home. Also for robbing the United States mail in Woodford county, Illinois, and for breaking into a ticket office in Indiana. He was subsequently heard of in Bloomington, Illinois, where he was arrested for burglary, having broken into a gun shop and carried off a quantity of goods which were secured while in his possession. Being arrested and lodged in jail in Bloomington, when his case came up for trial his father, a reputed millionaire, came to his rescue with large numbers of witnesses, from his own home, who testified to many acts of such folly as to have the appearance of insanity. Medical men also, took the stand and asserted that from their examination of the patient they were satisfied as to his insanity, one of them presenting a rather elaborate written statement as to examination of the eyes and the muscular control and with the "æsthesiometer" and announcing the conclusion that the patient was a victim of "paresis." Other physicians took the stand and testified that the facts, being as represented by the witnesses, and in view of all the testimony, they were also of the opinion that the prisoner was insane. The jury brought in a verdict of insanity and the prisoner was sent to the State Hospital at Kankakee. He was there under careful observation during three months and did not present any evidence of insanity. An examination with reference to the condition of the eye, abnormalities of muscular control and the test of the "æsthesiometer" corresponding to the examination, reported by the physician testifying that he was affected with "paresis," failed to verify any of the symptoms mentioned in his statement. The patient himself did not hesitate to say that he had adopted the method, before described, in order to "get him out of the scrape," and that his father had paid for the testimony which was given. Having been a sufficient length of time in the hospital, to admit of such study of his case as was necessary, and to afford certainty that there was no nocturnal epilepsy or tendency to paroxysms, with lucid intervals, the patient was discharged as not insane.

He was shortly after arrested in St. Paul, by a United States officer, to be brought to Chicago for trial, under indictment for robbing the United States mails, but escaped from the deputy, who had him in custody, by breaking a window and jumping from the cars, in the outskirts of Chicago. He next made his appearance at his home and was there placed under arrest and brought to trial under the indictments for burglary and robbery. His father took an active part in having him brought to trial at his home, seeming to prefer that the case of the United States against him, should not come up, and a large amount of evidence of experts and laymen was again furnished to the effect that the prisoner was insane, the ablest counsel being employed in the defense. Being myself subpœnaed, by the prosecution, I was present at his trial and testified that he was not insane, in my opinion, as did two or three alienists besides of wide experience. The jury, after hearing the eloquent plea of the defense, brought in a verdict that the prisoner was insane and he was again sent to a State insane hospital, this time the Central Hospital at Jacksonville. He had not been there many weeks before he succeeded in effecting his escape and in a short time was heard of in St. Louis, where he was arrested, for the theft of an overcoat, in a hotel. His present whereabouts are unknown.

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[1] As an example see "Wharton & Stille's Medical Jurisprudence" p. 239. "And Judge Davis, of the Supreme Court of Maine, went so far as to say, 'If there is any kind of testimony that is not only of no value, but even worse than that, it is, in my judgment, that of medical experts.'"

II. Case No. 3,111.—Male, aged 24, admitted March 5, 1889. This patient being in jail, awaiting his trial for stealing and driving away a drove of hogs, passed into what appeared to be an attack of melancholia. He refused to take food, was silent and stupid and indifferent to his personal wants. He remained persistently in this condition for so long a time that it was thought best to have an inquest to determine the question of his sanity. The jury brought in a verdict of insanity, and he was committed to the hospital at Kankakee. The assistant physician who first examined him, having understood from the officer who brought him that he seemed unable to speak, and had not spoken for a long while, when going to examine him addressed to him suddenly, and in a way calculated to surprise him, a peremptory question. He was surprised into replying quite intelligibly, but relapsed again into silence which, however, did not last long. His manner changed noticeably from day to day, and the attendants, without knowing the circumstances, expressed suspicions of him. He was notified that it was unavailing for him to similate longer and in a few days gave up all attempts to do so. He was returned as not insane in one month, the authorities being notified and taking charge of him when released from the hospital. He was brought to trial and sentenced to the penitentiary, and again on April 17, 1889, brought back to the hospital at Kankakee, from the prison, being certified as insane by the prison physician. After remaining under observation for a time again he was discharged as not insane and returned to the penitentiary, since which time nothing has been heard from him.

III. Case No. 4,572.—Male, age 25. Admitted June 26, 1891. This patient was under indictment for forgery, and was a victim of alcoholic excesses. He belonged to an exceedingly neurotic family and there were several relatives on both the father's and mother's side who had been insane. No evidence was obtained at the hospital going to show that the patient had been insane at any time, except his rather desperate conduct resulting from the combined effects of alcohol and "bad luck." He was under very considerable strain and nervous agitation and consequent physical exhaustion. He had also contracted what his family regarded as a matrimonial misalliance, and regarded himself as much persecuted by them on that account. At the time of his admission to the hospital, he perhaps properly came under the head of what the law describes as a "distracted person." His abnormal symptoms, however, were traceable wholly to his vices. The patient's family were persons of wealth and prominence, and procured able advice and set up the plea of insanity. I am not acquainted with the evidence adduced further than indicated by a statement which the patient made to me regarding the testimony of one of his witnesses, who was also a personal friend. This friend stated to the patient, so he informed me, that he had testified to various queer acts, largely of his own invention, for the purpose of assisting him to escape the consequences of his acts. This patient was discharged after a couple of months in greatly improved mental and physical condition, and such mental disease as existed was simply the result of his depraved acts. He at once relapsed into his vicious and intemperate courses on being discharged from the institution.

IV. A similar case to the above was that of No. 3112. Male, age 22 (circa). Admitted March 6, 1889. This patient being employed in the office of a large manufacturing establishment, found an opportunity on pay day to make away with about $3,000, and conceived the original idea of getting himself and the money packed in a trunk, carried to the railway station at Chicago and checked for St. Louis. The trunk was placed in such a position in the baggage car that the patient was left standing on his head, and a few hours of consequent misery were sufficient to make him call for deliverance. He created consternation by sounds, which, to the baggageman, resembled "Hark, from the tombs," but was finally discovered and "unpacked." Being arrested and returned to Chicago he set up the plea of insanity when brought to trial. Wealthy relatives came to his assistance with able counsel and expert testimony. The jury, after hearing the evidence of experts and the arguments of counsel, found a verdict of acquittal on the ground of insanity, and he was sent to Kankakee. Like the foregoing patient, he was morally hardly an average individual, and his arrest and confinement and anxiety had produced a condition of profound mental disturbance and physical depression, but such mental trouble as existed was traceable to his depraved conduct and its consequences, and did not exist at the time of the commitment of his offence. This patient also boasted of the able manner in which he had been helped out of his "difficulties" by his friends.

V. Another case coming in the same category was No. 3,133, male, age 25, admitted April 5, 1889; a young man with wealthy and influential friends. This patient had once before coming to the hospital, suddenly disappeared from Chicago and subsequently been found in New Orleans, and claimed that he never knew how he got there, although he shortly before his discharge admitted to me that he had made prepations for the journey, and carried a traveling bag with such things as he would need for the trip. At the time of his admission to the hospital he was under indictment for stealing a horse, but was not brought to trial, being found insane and committed on an ordinary verdict of insanity. He was in a condition of profound despondency and nervous prostration at the time of his admission, and subject to intense paroxysms of nervous headache. On two occasions while at the hospital, when allowed out upon the grounds, he disappeared. Once he was brought back from Cincinnati. At another time he went away only a few miles, and returned voluntarily the next morning. He claimed each time that he did not know what he was doing. His physical health improved very much, the patient was rational, well-behaved and industrious. After his case had been for some months under observation, and after careful consideration of all the facts, I became satisfied he was feigning, and he was discharged as "not insane." His disappearances, I subsequently learned, were timed so as to come just prior to the term of court at which his case would be called.

VI. Case No. 4,563.—Male, aged 26, committed June 15, 1891. This case was a parallel in many respects to No. 3,111. The patient being in jail awaiting his trial for forgery, feigned insanity and was sent to the hospital, where, after careful study and observation for a month, he was found "not insane," and returned to the county from which he came. Subsequently, when brought to trial, he set up the plea of insanity, but was found guilty and sent to the penitentiary. This patient and No. 3,111 were also alike in possessing but little influence or money with which to contest their case, and engage lawyers and experts to elaborate the defense on the ground of insanity.

VII. The next case, No. 3,856, male, age about 40, admitted February 15, 1890, is one in which the prisoner was indicted in Cook County for murder and found by a jury trying the case to have committed the act as charged, but to have been insane at the time such act was committed. *Concerning the circumstances of this case I know only this:* that the patient, while alleged to be intoxicated, shot and killed a man on or near his own premises; that he was a relative of an influential alderman; that the officer who brought him to the hospital expressed it as the prevailing opinion of those knowing all about the case, that the man had been saved by pleading insanity from the legitimate consequences of *his act, and that he never showed any sign* of insanity after his admission to the hospital. The sole evidence of any mental disturbance was that the patient himself stated that his "memory was poor." He was discharged as "not insane" after being under observation about two months, and presenting no symptoms of insanity.

VIII. Case No. 4,531.—Male, aged 30, admitted May 9, 1891. Sent to the penitentiary for burglary. *This patient* was found insane in the penitentiary, and transferred to the insane hospital. He had an attack of melancholia, which would seem to have been caused by the depressing circumstances of his confinement in prison. He recovered, and when his father came to visit the patient he, the father, stated that he had the assistance of an influential politician in Chicago to procure a light sentence for him, but that *his* case had gone too far to admit of his getting entirely clear on the plea of insanity, but he intimated that if he had understood in time how to work the case, he would not have been sent to the penitentiary.

IX. Case No. 4,566.—Male. Age 21. Admitted June 22, 1891. This was a patient of less than average intelligence, belonging to the order of "toughs." He was indicted for burglary and escaped the consequences of his acts by the plea of insanity. He was discharged as not insane after protracted observation in the hospital, and his father in coming to return home with him stated that his son had come to the hospital as the "easiest way out of a scrape," adding that he was a good boy but had "gotten into trouble through bad company."

X. Number 3,900.—Male. Age 40. Admitted Dec. 20, 1889. This man claimed his entire innocence of horse-stealing, the crime for which he was under indictment, and represented that his wife had purposely schemed to get him into the penitentiary in order that she might be rid of him; obtain what property she could, belonging to him, and be free to secure another husband. His troubles had produced in him an attack of melancholia, but there was no evidence of previously existing insanity. By the aid of able counsel, however, he was sent to the insane hospital instead of to the penitentiary. He made a good recovery after a few months treatment.

XI. Number 3,808.—Female. Admitted Nov. 20. 1889. [illegible] 'nsane" Dec. 23, 1889. This patient was [illegible] Her child was illegitimate and when it was but six days old she got out of bed, went and bought laudanum which she gave to the child and then started for a neighboring town, where the child died. She related the above herself and said her only idea was to hide her disgrace. She never showed any signs of insanity while in the hospital.

Illustrations of the questionable use made of the plea of insanity might be still further increased, but the above will perhaps suffice, and in closing I may be allowed perhaps to offer some suggestions as to means for avoiding such miscarriage of justice.

In the first place it would seem to be important that the question of insanity, when raised in a criminal case, should be taken up, fully considered and settled as a preliminary to any further proceedings and not made an incidental element in the trial of the case, confusing the two issues which should be distinctly separated, first, of the prisoner's mental condition, and second, of the commission of the alleged crime.

In an able medico-legal article on "The Legal Relations of Epileptics"[1] the eminent writer, Dr. M. G. Echeverria, makes the following demand. "Let a preliminary examination of the prisoner be entrusted to competent medical experts to fully ascertain and accurately to estimate the question of insanity before he be placed on trial, and this system once sanctioned by our legislature and put into practice, the prevalent misconception of insanity, and its abuse in contravention of public safety, will be effectually checked, and no occasion left to accuse the law."

In the second place, such modification of procedure should be made as to relieve expert testimony of all apparent partisan bias, by empowering the court, for its own satisfaction and that of the jury, to call in the assistance of persons possessing authority and reputation to render an opinion based upon a thorough examination of all the facts with the sole view of furnishing additional light for the guidance of the court and jury. In France and in Germany this practice prevails and men of thorough scientific attainments are called upon to present reports upon the question of insanity and other questions requiring expert knowledge and experience, and in this way the exhibition of diametrically opposed expert opinions supplied at so much "per opinion" is avoided.

In a paper upon the subject of expert testimony[2] appearing in 1873, Dr. John Ordronaux, the then State Commissioner in Lunacy, of New York, thus expresses himself:

"Whenever, therefore, that majestic system of jurisprudence, which has been a convenient treasure-house for even the common law of England to draw from, has been adopted, no contradictions and no ambiguities in the application of expert testimony before courts are known. Under its practice the expert was considered simply as an *amicus curiæ* whose opinion was *ex vi termini* a *quasi*-judgment in the premises."

In Wharton and Stille's Medical Jurisprudence, in the chapter on the evidence,[3] the following statements are made:

"Hence when the trial comes on, the expert who is selected because he holds views which the great body of his profession reject, testifies often alone, or with but slight and inadequate correction. From this have arisen those outrages on public justice which eminent medical authorities have been among the first to deplore. Hence it is that high medical authority has called for the abandonment of the present system of 'voluntary' experts, and the establishment of a government board, as is the case in Germany."

Also in the same connection[4]: "In many parts of Germany the practice obtains of requiring the medical faculty of each judicial district to appoint a special committee to whom questions of this character are referred. This committee is examined directly by the court, and gives testimony somewhat in the same way, and with the same effect as would a common law court when reporting its judgment in a feigned issue from chancery, or as would assessors called upon the canon law to state, in proceedings under the law, what is the secular law of the land on the pending question."

In France the court often calls in men whose opinions are authoritative to prepare and report upon insanity and allied questions, and governs the conduct of the case by information thus obtained. The managers of the New York State Lunatic Asylum in one of their annual reports express themselves as follows:[5]

"It may not be amiss to observe that this matter of the testimony of experts, especially in cases of alleged insanity, has gone to such an extravagance that it has really become of late years a profitable profession to be an expert witness, at the command of any party and ready for any party, for a sufficient and often exorbitant fee; thus destroying the real value of the testimony of unbiased experts. Vaunted and venal expertness is usually worthless for evidence; and yet such testimony is getting to be in great demand. One expert, whether real or assumptive, is set up against another; and finally it will result that, by competition, pretending inexpertness will prevail, by numbers, against the real expertness of those few thoroughly qualified men whose judgment is the mature experience collected from years of daily study and practical observation. Obviously it does not become States or great tribunals, or public justice, that the testimony which settles matters of weight should be trifled with as it is for an emolument; and experts should only be called, as formerly they were, by the court itself, on its own judgment of the necessity requiring them; and when called at all, they should be sworn advisers of the *court and jury*, and not witnesses summoned in the particular behalf of any party; nor should they be permitted to receive either fee or reward from any party, but only from the court or the public. Capable judges are competent to say in any case whether the court requires the evidence of experts for its information in matters of technical knowledge or science, and also to say who shall be particularly summoned for his acknowledged expertness; and should, therefore, have the control of that sort of testimony, which is only allowable to enlighten the court and jury, and not to be the ordinary captious weapon of attorneys and counselors, nor to be the theoretic, one-sided opinions of sciolists, founded on some hypothetical case which deflects more or less from the actual truth of the real case in question."

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[1] American Journal of Insanity. Vol. 29, p. 556.

[2] Aermican Journal of Insanity. Vol. xxx., p. 316.

[3] p. 243.

[4] p. 242.

[5] Quoted by Ordronaux, "American Journal of Insanity. Vol. xxx, p. 313. et seq.

Ordronaux further states, in the article already quoted,[6] page 317: "Courts of equity are in the habit of sending issues of fact to be tried before masters in chancery, and their reports are always accepted as preliminary judgments upon the issue tried before them, requiring only the subsequent confirmation of the court to give them plenary authority. A similar rule obtains in many European countries in relation to issues involving the necessity of expert opinions."

If the foregoing citation of cases and opinions shall serve in some measure to direct thought and attention to the fact that failures of justice result from imperfect medico-legal relations in the matter of determining the question of insanity in criminal prosecutions, they will have fulfilled their object.

Medicine stands ready to do her worthiest for furthering the ends of justice, but is dependent upon law for her opportunity.

One step in advance has already been made in Illinois, and in two or three other States of our Union, by establishing a separate asylum for insane criminals, and placing there such criminals as are really insane, but this is of no avail when the plea of insanity is fraudulent. There is nothing that the superintendent of an insane hospital can do when convinced that any patient, criminal or otherwise, is not insane, save to open the door and say "depart in peace." It is assuredly not well that justice should be burlesqued or made merchandise of by permitting flagrant malefactors to pose as irresponsible madmen in our courts, and afterwards boast of their cleverness in cheating courts and juries—neither, on the other hand, is it well that really insane persons should be found guilty and punished for crimes of which they are morally guiltless, because of incompetent or unenlightened presentation of their cases, or of ignorant popular clamor.

Both of these failures of justice would be remedied, to a great extent, by a better system of regulating expert testimony, and especially by legally defining and restricting the function of experts in such a manner that the expert shall be *amicus curiæ*, an assistant to the court, and not, as sometimes happens, a suborned and hired accomplice in the prisoner's guilt.

BOOK REVIEWS.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, Ninety-third Annual Session. Baltimore. 1891.

The reviewer of so excellent a volume as the present one is at a disadvantage, when his space is limited. A full page would be none too large to give our readers even a condensed account of the meritorious papers in this book of nearly 400 pages. The Presidential Address by Dr. T. A. Ashby deals with medical legislation for the repression of quackery, and shows the necessity of a greater degree of unity and organization on the part of the profession in Maryland, in order to prevent the gradual breaking down of the barriers against incompetence and greed. The President wisely urges the profession throughout that State to come together at the various county seats to form as strong local organizations as possible, in order that the voice of the profession may not go unheeded in the future as it has gone in the recent past. The annual address was given by Dr. W. H. Welch, who is also President-elect; its subject was the causation of diphtheria, and has already been referred to at length in these columns. This address was, in effect, an arrangement of the latest details of information regarding the bacillus diphtheriæ, and the dissipation of some erroneous views formerly held and taught concerning the disease. Dr. Joseph T. Smith presented a supplementary paper on the treatment of the disease, in which the utility of alcohol is maintained in certain stages of the attack. Dr. Randolph Winslow had a surgical contribution on injuries to the kidney, based on a case which resulted in recovery, after a protracted convalescence. Dr. J. D. Blake's paper deals with the operation of perineal section for the relief of various urethral lesions. He has found the use of electricity an aid in the passage of instruments in tight stricture. Dr. Michael's paper on obstetrical antisepsis, and Dr. Gardner's on milk fever, are intelligent and modernized presentations of their respective arguments; we hope to return to one or both of these papers in a future issue of The Journal. Dr. H. Newell Martin has two physiological articles, one on the recent discoveries by Dr. Hodge, of Clark University, concerning the ganglion cell. His second paper, on the nerves of the heart, recounts some studies made by him and Mr. Lingle, at the laboratory of the Johns Hopkins University, which show a wonderfully beautiful preservative function, believed to apply to the inception of suffocation. When dyspnœa begins the arteries of the heart are seen to dilate, while the systemic vessels constrict, and this, Nature's conservative step, is so taken in order that the last remaining oxygen shall go to the vital and fundamental organ. Dr. Hiram Woods has a plea for the greater care of the eyes of infants, under the title of "Blindness in the United States." He quotes a practical suggestion from the usages of the Eye and Ear Infirmary of Sheffield, England, which consists in the giving out of a card to the poor, warning those who have care of young children as follows: "If a baby's eyes run with matter and look red a few days after birth, take it at once to a doctor. Delay is dangerous, and one or both eyes may be destroyed if not treated immediately." Dr. Cathell has a paper on the effects of tonsillar hypertrophy. Dr. Humrichouse writes on diphtheria and intubation. Dr. Rohé reports in continuation of his earlier series in 1890, a second series of one hundred cases of labor at the Maryland Maternité, with notes regarding the occurrence of rare positions, of puerperal convulsions and of ophthalmia neonatorum. Dr. John C. Hemmeter has two papers of interest; one on the effects of alcohol and other drugs on the velocity of the blood current, as measured by the stromuhr of Ludwig; and a second on the treatment of acute miliary tuberculosis with tuberculin. The results in one case were so favorable that some late consultants are led to offer the suggestion that the disease was not miliary tuberculosis, but typhoid fever engrafted upon a chronic tuberculous consolidation of the lung; this recital must have been an intensely interesting one. Dr. Samuel J. Foot writes on the training of the feeble-minded; Dr. J. J. Chisholm on the eye diseases of the unborn, and there are one or two others of less striking character. Taken as a whole, the Maryland fraternity have no reason to be other than proud of this year's work. It is worthy of a better and more attractive binding and "dress," as the printers say.

Stricture of the Rectum. A Study of One Hundred and Thirty-eight Cases. Second edition, by Chas. B. Kelsey, M.D. Professor of Diseases of the Rectum at the New York Post-Graduate School, etc., etc. pp. 48, paper.

This is a valuable pamphlet and fully sustains the reputation of the author as an authority on this interesting subject.

Dr. H. H. Knapp, Superintendent of the Kansas State Insane Asylum at Osawatomie, has tendered his resignation—to take effect July 1st. He has held the position nineteen years.

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[6] American Journal of Insanity, Vol. xxx, p. 317.

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SATURDAY, APRIL 9, 1892.

SEVERE EFFECTS OF DIPTERIC PARASITISM AT ST. LOUIS.

From *Insect Life* we occasionally derive information as to human parasites belonging to entomology. A recent article relates the case of a lady of St. Louis who suffered from the hominivorous habits of the screw-worm. The attack was first noticed by the patient in consequence of a nasal irritation with sneezing paroxysms of so great violence and constancy that a physician was called in. A diagnosis and treatment for influenza met with failure. The patient grew worse on the second and third days, having an increasing distress, intense pain between the eyes, with face, nares, eyes and pharynx greatly swollen. On the fourth day, two or three white worms were extruded from the nose by sneezing, which led to a local examination and a new diagnosis. A large number of white larvæ was seen attached to the nasal mucous membrane so far as its swollen condition permitted of its being viewed. By instrumental means about thirty larvæ were extracted. Chloroform spraying and solutions of carbolic acid failed of making the parasites loosen their hold. Indeed every effort to dislodge them, caused them to retract and bury themselves more deeply in the tumefied and bleeding tissues.

During the next three days instrumental means were continued by the physicians and over two hundred larvæ were removed and put in alcohol. Some of them were taken from the posterior surface of the tonsils and nares, by the help of indirect illumination and curved forceps. On the eighth day no more larvæ could be found and relief began to be experienced; the inflammatory conditions subsided and the structures infested by the larvæ gradually recovered tone and normal function without any permanent injury to any part.

But meanwhile, during the acute period of her suffering, the patient developed a suicidal mania. She implored her attendants to allow her to end her life, and even argued with her physician upon the advantages to herself and family if her life could be ended. This suicidal tendency has been observed before in patients suffering from screw-worm infection; and all such patients require to be constantly watched during the acute period of the attack.

The larvæ were nearly all fully grown and would probably have come away spontaneously in another day. The method and time of lodgment of the ova were not ascertained beyond an indistinct recollection on the part of the patient—of some moderate nasal disturbance after sleeping near an open window; there was no history of catarrh or ozæna known in the case. Cases of this kind of parasitic trouble have been not uncommon at the St. Louis City Hospital. In the summer of 1888, there were five or six cases; four in 1889; three in 1890; and one or more in 1891. The assistant superintendent of the hospital is quoted as saying that "one of the cases in 1890, died from the exhaustion of the attack, and one died from another disease while affected with the worm. Others recovered, but with greater or less mutilation. Several cases, especially those of 1888, came from Texas, but some were generated in this (St. Louis) vicinity." Not a few of these cases were in persons who were known to have slept in the open air, probably receiving the infecting oviposite while exposed. These cases generally occur in the more southerly localities, but some have been reported as far to the northward as Wisconsin. The practical teaching of the case above recited is "not to sleep out of doors in the daytime with the face uncovered." And further, the depressing mental effects of the attack, already mentioned, should not be overlooked.

With regard to treatment, instrumental removal has not always been demanded, since there are cases on record where the spray of chloroform has been efficient for the dislodgment of the screw-worm, so-called, in considerable numbers. It is by no means certain that all these parasitic invasions have the same genus of blow-fly as their originator. If this is true we can readily understand that they will not all behave alike under the same treatment; it is reasonble then to see chloroform succeed in one set of infections and fail in another series. In the St. Louis case none of the larvæ were preserved for purposes of study and identification.

THE SULPHONAL HABIT.

DR. E. H. SQUIBB, of Brooklyn, in a reprint from the *Transactions of the New York State Medical Association*, 1891, entitled "The Materia Medica, Pharmacy and Therapeutics of the year ending October 1, 1891," emphasizes the warnings of a few writers against the indiscriminate use of sulphonal. He considers that it is usually safe; and having a wide range of usefulness, its sale has largely increased during the past year. The form of administration, in a very hot aqueous solution, as suggested by **Dr. Stewart**, of Philadelphia, is commended as a means of securing prompt action and of avoiding the customary delay of an hour or more. **Dr. W. H. Gilbert**, of Baden Baden, thinks he has seen undesirable results from its popular and steady use. "It is surely bad practice," writes **Dr. Squibb**, "to leave the matter in the patient's hands to the extent of directing him to take a certain dose whenever he cannot sleep, as is apparently the practice of some. There are evidences now on record of the habit being formed approaching that of morphia. Fatal cases also have been reported during the past year. For such an effective and widely used hypnotic, then, the conclusion should be to use caution." **Dr. Carlyle Johnstone**, of Glasgow, who has used sulphonal in a great variety of cases, has found that small doses of the drug are preferable to full ones. As a rule, he has not found it best to prescribe it oftener than on alternate nights, in which case, presumably, there will be less danger of habituation.

BRONCHO-PNEUMONIA FROM THE B. COLI COMMUNE.

Some five years ago **Sevestre**[1] explained the occurrence of broncho-pneumonia in cases of enteritis in infants by the assumption of an infection from the intestine. His language is a little obscure, and it is not clear whether he meant a bacterial infection or a poisoning by chemical products formed in the intestine. While both modes of infection are probably true, the first at least has received a very positive confirmation at the hands of **M. Lesage**. At the request of **Sevestre**, **Lesage** investigated bacteriologically five cases presenting the requisite clinical features. In four cases there were patches of broncho-pneumonia, one of which had suppurated. In the other case there was merely a pulmonary congestion. In every case the B. coli commune was found in the pneumonic patches and in the congested lung. Moreover the B. coli commune was the only microörganism found in the pneumonic patches. In some conditions of enteritis this germ appears to acquire a virulence which it does not ordinarily possess, and when, under these circumstances it escapes from the intestinal canal, and is carried to distant organs, it seems capable of producing a wide variety of pathological conditions.

The study of this microörganism is becoming more and more important, particularly with reference to infections in and about the intestines. It can hardly be doubted but that some of the obscurity now surrounding diseases of the right iliac region, and which it is the custom to-day to class in a rather comprehensive way under the title of appendicitis, will be cleared up when the natural history of this organism is more perfectly understood.

The controversy between **Rodet** and **Roux** on the one hand, and **Chautemasse** and **Widal** on the other, relating to the identity of this microörganism with the **Koch-Eberth** bacillus, the alleged cause of typhoid fever, can hardly fail to be of the greatest service in leading to the truth.

These observations of **Lesage** indicate the possibility of other complications of enteritis in infancy being due to infection from migrated B. coli commune. A few weeks ago the pathological importance of this microörganism was reviewed in these columns, and reference made to the wide variety of lesions in connection with which it had been found.

MENTAL DISCIPLINE AMONG THE INSANE IN ASYLUMS.

The *New York Medical Journal*, March 19, refers to educational work that may be done among the inmates of our asylums. In the Utica Asylum class instruction has been used at intervals. It is now again in successful employment on a limited scale, having been revived about three years ago. Two patients, who could not read or write before becoming insane, learned to do both before being sent to their homes. One woman was a terror of the ward until ten o'clock in the morning, when she goes childlike and quiet to her class and for two hours is the most docile and interested of all the pupils. Only the fear that she may be kept away from her school makes her at all controllable at any other time. In the earlier history of the Utica Asylum, about fifty years ago, the efforts at teaching the inmates made by **Dr. Brigham** were attended with some success, and classes were started, but the experiment was not renewed under more recent management, for several years. **Dr. Kirkbride** and **Dr. Pliny Earle** made brief trials of education as a means of cure.

The greatest successes in that direction were won by **Dr. Lalor**, of Dublin, at the Richmond District Asylum. He persisted in educational treatment for thirty years. His sturdy adherence to his system was followed by the happiest results. He sought to bring nearly every patient, not incapacitated, in the hospital department into one class or another of his selection as best suited to the needs of the individual.

The fountain-idea of this plan of **Dr. Lalor** was to provide occupation for those of his wards who would otherwise be unemployed. Some were sent to school, some were trained in industrial exercises, and about one-fifth part engaged in both. Music occupied an important place in this system, common school studies were laid out for the brighter members of the flock, while object-teaching interested the less intelligent ones. The Richmond Asylum has a different air from many others. There are there signs of activity and movement, without violence, everywhere, and there is less of that gloomy monotone that commonly overshadows asylum life. "This is a matter," says the *Journal*, "that is worthy the attention of the well organized asylums of the land. One of the essential features in thus ministering to the mind diseased is the training of the will, in all disorders of personality, in all unstable conditions of the nervous system. In the prevention and cure of disease, education is our powerful ally, and one of the highest duties of the modern doctor is to indicate the kind of mental and moral training best suited to the individual needs."

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[1] Le Bulletin Médicale, January 24, 1892.

SAD LESSON AS TO MENTAL OVERSTRAIN. THE "SPRING VACATION."

The *Times and Register* refers to the sad fate of an eminent medical teacher of Philadelphia: "With deepest regret we learn that the doors of the insane asylum have closed upon him! What an ending for such a life! To the very last no evidence of mental alienation appeared in his lectures or his writings. The habit of a lifetime's assiduous labor carried him along in the well-worn grooves, although outside of them his malady was easily discernible. Hard work, no rest, no Sabbath, no vacation; by such means his powerful intellect carried him to the forefront of his profession; but at last outraged Nature reached her limit of endurance, and the break-down was complete."

Not a few medical men of our acquaintance no longer bear so well the fatigue of a winter's campaign, as they did a year or two ago. The strain, more particularly in the case of city dwellers, has been rendered harder to bear by some undefined malaerial "constitution," as our forefathers used to say. Malaise and a propensity to lassitude indicate, to the minds of some observers, that many a hard-worked physician may be under the epidemic influence without being sick enough to give up to it. This kind of continuity of effort, or working under protest, has done no little injury. A nervous break-up, like that referred to in the above quotation, has not often resulted, but much causeless suffering of a psychical nature has been experienced. It is high time now for many of our city fraternity to take a run into the country. They need to invent for themselves "a spring vacation." A longer and a serener future is involved in it, for many.

Bequests to Hospitals.—Under the will of the late Major-General George W. Cullum, of New York City, the following hospitals receive donations: The Women's Hospital and annex, $6,000; the Cancer Hospital and chapel, $10,000.

AMERICAN MEDICAL ASSOCIATION.—NOTICE TO OFFICERS OF SECTIONS.

Officers of Sections are requested to take notice that the official program must be completed by May 15, by which date each Secretary must hand to the publication committee a list of the papers to be read in his Section, arranged in accordance with the days of meeting. Titles sent later than this date cannot be included. Secretaries of Sections will please send their lists of papers to Geo. Duffield, M.D., Chairman Committee on Publication, 25 Washington Avenue, Detroit, Mich.

AERIAL TRANSMISSION OF TYPHOID FEVER.

Dr. Sicard, of Beziers, has reported to the Paris Academy of Medicine his series of original investigations regarding the spread of typhoid fever through the atmosphere. His plan was to have his typhoid patients breathe through tubes into water that had first been sterilized. Specimens of water thus treated were frequently found to yield the characteristic bacillus, under cultivation. This amount of success did not always attend Dr Sicard's experiments, and this is not at all surprising in view of the fact that the typhoid bacillus has been found to be elusive, by the best of bacteriologists, under conditions that were strongly indicative of its presence. But Dr. Sicard's results were sufficiently uniform to warrant an inference that the expired breath of typhoid patients, like that of typhus fever, may serve as the channel for fever infection. For many years the infective properties of the expired breath of ship fever has been taught by every recognized authority, but with regard to typhoid fever the teaching has not been so general and positive. But Dr. Sicard's observations, if fully confirmed, must modify our former conceptions, and it will become our duty to put upon their guard all those who attend upon the typhoid patient.

The vast majority of typhoid infections have their origin in a contaminated water supply, but every observer has been puzzled more or less by cases of the disease which have arisen apart from any known inculpation of the drinking water. These obscurely originated cases may belong to the group whose bacillar contact is atmospheric—not simply by means of the breath of the sick but also by the emanations from sewers, cesspools and other receptacles of typhoid excreta.

Frauds in Eucalyptus Oil.—There is a lively demand in the English markets for oil of eucalyptus, and some unscrupulous retailers of the drug have been tempted to tamper with it. A chemist at Liverpool was detected in trying to sell an article containing 20 per cent. of alcohol for the crude oil, and was fined. The *Therapeutic Gazette* has an editorial on the subject of misrepresentation that is liable to deceive the unwary buyer in this country. Get the best, we say, and accept that only.

A reliable fluid extract of eucalyptus can be had in this country, but with regard to the *eucalyptol* obtainable here we are not so certain. In the article in the *Gazette*, it is stated that Professor Mosler, of Griefswald, has published his results from the use of the oil of eucalyptus in the *Berliner klinische Wochenschrift.* Mosler's paper says, "The oleum eucalypti used by me was procured from Messrs. Hoelzle and Chellius, of Frankfort-on-the-Main." A chemically pure eucalyptol is listed by an importing house at a dollar an ounce, while a good standard article may be had at half that sum.

College Commencements.—The Woman's Medical School of the Northwestern University held its Commencement exercises March 28, 1892. There were nineteen graduates. The valedictory address was given by Miss Marie Louise White. Dr. Henry Wade Rogers, President of the University, conferred the degrees.

The graduating exercises of the Rush Medical College of Chicago were held March 29, 1892. The graduating class numbered 142, the largest class ever turned out by a Chicago medical school. Will V. Gage delivered the valedictory, and Prof. E. L. Holmes, M.D., the doctorate address.

On the same day the Chicago College of Physicians and Surgeons celebrated the termination of the session, by conferring its degree upon forty-two graduates. The doctorate address was given by Prof. Bayard Holmes, M.D., and the valedictory by W. B. Hazen, of the graduating class.

DOMESTIC CORRESPONDENCE.

To the Editor of the Journal of the American Medical Association:

I feel confident that I voice the sentiment of the profession when I thank Dr. Suiter for his address on "The Importance and the Necessity of National Health Service," and you for publishing it.

Let us unite at Detroit, and appeal to Congress as the voice of one man, and surely we will be heard. Respectfully,

S. E. Hampton, M.D.

Milton, Ky., March 28, 1892.

Rigid Enforcement of Immigration Laws.—Acting under orders from the Assistant Secretary of the Treasury, no more immigrants will be allowed to land simply on the assurance from some society that they will not become public charges. Any one who does not possess $10, or who does not have a railroad ticket to his destination, will be detained and sent back to the country from which he came. It is said that under this rule the number of immigrants who may be sent back often amounts to as many as 500 on the days of the week when steamers are due.—*Boston Med. and Surg. Journal.*

NECROLOGY.

Dr. David Hayes Agnew.

Dr. David Hayes Agnew, of Philadelphia, died on the 22d of last month, about twenty years after his induction into the University of Pennsylvania chair of surgery. He was a native of Pennsylvania, the son of a physician of eminence, and had reached his seventy-fourth year. After graduating from the University just named, in 1838, he for a time tried country practice, but this not meeting with his expectations, he removed to the city. He began to lecture in the Philadelphia school of anatomy, and it was not long before he brought it and himself into prominence through his lectures. As one of his fellow surgeons has remarked, "He was the school. He made it, and it made him. One of the reasons why he has always operated so successfully is that he always knows within a hair's breadth of where he is cutting. He has a wonderfully exact anatomical knowledge and always appears to have the bearings of the different deeper organs and tissues as vividly before his eyes as if the superficial ones were made of glass." His first published lecture, known to us, bears date of 1856, and was his valedictory to his anatomical class. During the late war, Agnew and Morton alternated as consulting surgeons of the great Mower General Hospital, probably the largest in the country, with a staff of nearly fifty resident surgeons. In this position the volume of military surgery, of a critical and capital class, was almost without parallel, up to that time. In 1863 he began his connection with the University as demonstrator and lecturer on clinical surgery, and about the same time went upon the staff of the Will's Ophthalmic Hospital. He had already received an appointment to the surgical staff of the Philadelphia Hospital, and other hospital appointments followed, as well as his election to the Presidency of the College of Physicians. In 1884 he began to draw out from the arduous public work he been carrying, by resigning from the Philadelphia Hospital after a service of eighteen years. In 1888 he resigned his University professorship, and at the end of that session accepted an emeritus position. His friends, with the graduating class of 1889, commemorated his retirement by the presentation to the University of a fine portrait in oil of the beloved professor. His chief literary work is his Principles and Practice of Surgery, published by Lippincott in three large volumes, of about three thousand pages and over a thousand illustrations. This book was a monument of patient compilation and original work and was regarded by good judges as the most practical standard of surgery in the English language. A revised edition was issued in 1890. It has been translated into the Japanese tongue. His membership in the Association dates from 1872. Dr. Agnew's reputation as a surgeon was worldwide, and when the operative procedures, that were necessary in the case of the mortally wounded President Garfield were confided to him, there was a feeling throughout the country that a wise consultant had been selected. Operative surgery was the chosen field of his professional labor and admirably did he occupy it, his method being marked with rapidity, confidence and conservatism, but he was probably also one of the most highly esteemed surgical teachers of his day. One of our contemporaries says of him: "As an operator he will long be remembered for his consummate skill and heroic boldness, unmarred by rashness, and by his exquisite sensibility to the pain of his patient."

From our Philadelphia Correspondent.

Death of Professor D. Hayes Agnew, Emeritus Professor of Surgery in the University of Pennsylvania.—D. Hayes Agnew died March 22, at his home in Philadelphia. He suffered with an attack of influenza last year, from the effects of which he was a long time recovering, and probably did not regain his previous health, although attending to his duties up to a fortnight before his death, when he was confined to his room with bronchitis. Indeed, he continued at work up to the last, for on the day he was obliged to lay down his work never again to resume it. he performed an exhausting surgical operation, at the conclusion of which he was seized with an attack of angina and exhaustion, which seemed as if it would at once prove fatal. By advice of friends he consented to remain at home for a few days, and, as a result of their kind ministrations, he appeared to be recovering until two days before death, when uræmic symptoms appeared and he passed away at the age of 74 years, leaving a widow, but no children. The funeral services were held at the Second Presbyterian church, of which he was a member and constant attendant; the pall-bearers were Drs. Walter F. Atlee, William Hunt, W. W. Keen, D. Murray Cheston, DeForest Willard, R. A. F. Penrose, Horatio C. Wood, John Ashhurst, R. S. Curtin, W. F. Woods, Hunter Maguire, and E. L. Duer. Justices Paxon and Sterrett, Judges Thayer and Pennypacker; Messrs. George Junkin, M. Hampton Todd, Pierce Archer, Thomas W. Hall, Thomas G. Hood, James Long and Crawford Arnold. A very large concourse of personal friends crowded the church to its utmost capacity. Many more were turned away, being unable to gain admittance.

A special meeting of the College of Physicians was held to take action upon the death of Dr. Agnew, who last year was its presiding officer. Dr. S. Weir Mitchell presided, and made a brief address. He was followed by Drs. John Ashhurst, W. W. Keen and Alfred Stille, who each referred to the loss that the college had sustained, in moving terms. A minute was adopted of resolutions of respect and condolence, a copy of which was directed to be sent to the family, and the Fellows of the College decided to attend the funeral in a body. The members of the faculty of the medical department of the University of Pennsylvania also met and adopted resolutions upon the death of Dr. Agnew, setting forth among other things, "their appreciation of the nobility of his personal character and the enduring excellence of his professional achievements. As a didactic lecturer he was unsurpassed. As a clinical lecturer his enormous experience and his diagnostic and operative skill made him preëminent. That skill which amounted to genius was the foundation of his scientific greatness and often enabled him at a glance to detect conditions which had eluded the investigation of others."

Dr. Weir Mitchell, in a letter to one of our daily papers, so admirably sums up the salient points of the life history and personal character of Dr. Agnew, that it may be reproduced here as a memorial of one who both "served his generation well" and "bore without reproach the grand old name of gentleman."

To the Editor of the Public Ledger:—Sir: When a man as remarkable as Agnew dies there are a few brief days during which the lay public takes interest in the qualities of his purely professional life. Then his remembrance lives on in tender forms for those who loved him, and in technical shape, by what he wrote, survives in the gathering annals of his profession. Before, as time goes on, the natural interest of men in the details of a notable life becomes less I should like, with your leave, to say certain things of Agnew which it greatly delights me to be able to say of one of the masters of my guild. Amidst all that men have yet said of him, these have not been said—nor are they likely to be, except by physicians who know—ah, very well know—the true qualities of their rank and file, and are deceived by none of the pretences and shams which now and then win from the public a false estimate of this man or that, and set him, for a time, on dangerous levels of apparent competence. For methods which won this sort of success Agnew had a gentle contempt. He once said to me that it distressed him to be spoken of in the daily papers, and, with the nearest approach to sarcasm I ever heard from him, added: "I don't have a great esteem for newspaper doctors." He owed nothing to such means he here alluded to. His upward progress was due to the most earnest use of every energy in the doing of whatever he had to do. For him, to do a thing well was to satisfy his sense of duty as nothing else could, and moreover, work was his only play—strange paradox! He rejoiced in this use of himself. To be long away from work wearied him, so that there went to the perfecting of his every day business—duty and the pleasure which others get out of holidays. I do not say that this combination which makes true play of mind or body a thing impossible is a quite desirable result. The body which can endure it and live to age must be of sturdy make.

When he and I were in our early days—of ill-repaid work, he taught anatomy to crowded classes in a building where I had my laboratory. I then saw much of the tall, strong man, out of whose perfect anatomical knowledge began to come the quickly trusted skill of the surgeon. This is a natural way to surgical success. It came by slow degrees—and at last clinical position, and, later, the Barton Chair of Surgery. Then a vast and overflowing practice followed. There was nothing abrupt or startling in this success. It was a normal growth, and due in great measure to the esteem and confidence with which his own profession learned gradually to repose upon his surgical judgment. He was a *doctor's doctor*, and that means a great deal to us who see ourselves from the side scenes and amid the grim sincerities of the consultation. As I watched his career, it seemed to me he owed our unbounded trust not to his intellect, which was not highly originative or fitted for profound research, but to singular balance of mental and moral qualifications. Novelties neither too much tempted nor too much repelled him. He was intellectually very honest. The surgeon is sometimes apt to become dramatic, to like display of his own skill. Agnew had none of this. Neither caution before a decision, nor cool courage in surgical action, was ever wanting. The presiding mind was strong rather than subtile, and was capable of swift action in emergencies. I never knew a man who seemed to me to live his professional life on higher levels of that common sense which in its perfection is so uncommon. He seemed to me also to get out of his mental and moral machinery all that was possible in life, and how rare is this? Nature had made him ambidextrous, and the kindly grave face and the gentle pity of his ways with the sick or hurt was a pleasant thing to watch.

For behind this quiet and instinctive tenderness was a real kindliness of heart—a great good will to men, an unbroken sweetness of temper. To know what that gift or that conquest means a man must have been a physician. He had it, and, too, a calm delight in his power to help. He once said to me "that sometimes the immense amount of unpaid service to physicians and their families was hard on too busy people." But then he added, "It is, after all, a great help to oneself. We ought to be thankful we are not always making mere money." Of the exact words I cannot be sure. Of the sense I am.

I have seen many men change almost radically as life went on. Agnew was from first to last, young or old, with small means or easy competence, the same man. He held resolutely by his Christian creed and took it with him into life. A certain simplicity was in all his ways. The outcome of act from belief was fearless and unquestioning. He believed, as I do, that a clinical class of men and women is disgusting. He thought it wrong, and sacrificed to his belief the coveted Surgeoncy of the Pennsylvania Hospital—resigning at once rather than obey the order of the managers. The country saw what manner of man was this when Garfield was shot. Agnew looked on the call to the President as a duty to which all other duties and all other interests must yield. It was a nation's call which he obeyed. For three summer months he spent nearly all of his time in Washington or at Elberon. His bulletins were simple. He kept the inevitable reporting cormorant at bay. The storm of impertinent criticism, lay or, medical, honest or unscrupulous self-parade disturbed him not. He did his duty nd made no answers. Meanwhile his consultation room was closed, his operations ceased, his income fell to nothing. The inevitable result came, and the President died. Agnew declined to send in an account, and tranquilly accepted from Congress an honorarium such as is common enough to receive for a single large operation done in any distant city. This pitiful expression of a nation's gratitude to appearance troubled Agnew as little as any minor annoyance might have done. So long as the creditors' Conscience and Duty were paid in full he was in no wise greatly concerned. What he won in life was the just reward of fine faculties of mind, unending energy and a general loveliness of nature, which, in all his forms of useful activity, secured for him the utmost affection. There was no luck in this sturdy, unreposing life. Fortune did nothing for him.

In the noble words of one of our own home poets whom we have not yet learned to know, he might at any time have said to the fickle dame:

> "I am not poor enough for thy reward;
> Honor and splendor in my heart abide;
> I want thee not, save that thou kneel, and so
> Proffer thy service as cup-bearers do."

Fortune bent down to him, not he to her, and therefore it is that his profession so much reveres his memory—thankful less for its intellectual product than for the beautiful illustration of how noble a thing the life of a great surgeon may be. S. Weir Mitchell.

Professor Agnew left a legacy of $50,000 to the Hospital of the University of Pennsylvania, $1,000 to the College of Physicians and made a number of other public charitable institutions his beneficiaries. The total amount of his estate being estimated at $100,000.

Dr. Alfred Carpenter, of Croydon, England, was one of the notable figures at the meetings of the British Medical Association. His death at the age of 68 removes an honored standard bearer. "Somewhat in advance of his times—as reformers must of necessity be—he did much with pen and speech to educate public and professional opinion in matters pertaining to hygiene and domestic and municipal sanitation." He was instrumental in the accomplishment of much good sanitary work, in his own town, where he was a member of the Board of Health and Justice of the Peace. He was medical attendant to the Archbishops of Canterbury, and his other important public responsibilities fill a list too long to enter here. An appreciative memorial note appears in *Public Health*, March, from which we quote the closing paragraph:

"Nothing better pleased Dr. Carpenter than to hospitably entertain sanitarians or students at his private house near Croydon, and to take them over the sewage farms. Although an advocate of total abstinence, he would on these occasions place wine on the table for the use of those who differed from him in theory and practice. Latterly he was afflicted with threatened blindness, but until quite recently was fairly vigorous. Dr. Carpenter was a good speaker, a kind and sincere friend, a man of culture and refinement, and his death is a loss both on account of public and private worth."

Dr. David C. Comstock, of New York city, died March 24, 1892, from paralysis following apoplexy. He was born at Reading, Connecticut, about fifty-three years ago. His medical education was obtained at the University of Michigan and Bellevue Hospital College, New York, getting his M. D. at the latter in 1869. He was, for many years, a professor in the New York Veterinary College, secretary of its Faculty and Sanitary Inspector to the Board of Health. He was an affable and energetic practitioner, and had scholarly qualities and fitness for teaching as well.

SELECTIONS.

Russian Jews Stopped on the German Frontier.—Owing to the prevalence of typhus fever, the German Government has prohibited Russian Hebrew immigrants from crossing the frontier. In consequence, the Russian frontier towns have become very much crowded, and it is feared that typhus fever will spread through all of the border towns. Most of the immigrants who have been stopped were on their way to America.—*Boston Med. and Surg. Journal.*

The Toxicity of the Blood in Cases of Acute Suppuration.—Nissen reports a number of experiments in which the blood of persons suffering from suppuration was injected subcutaneously and into the peritoneal cavity of mice. In all cases blood from patients in the same clinic, but without suppuration, was injected as a control experiment, but in none of these cases was any effect produced upon the mouse. From the patient with suppuration, the blood was taken from a part of the body distant from the seat of the pus. In most of the cases, the mouse died within from two or three to twenty-four hours after a series of characteristic symptoms. After death, the mice showed hæmorrhagic exudations, hepatization of large portions of the lung, enlargement of the spleen, and other indications that the injected poison may have been fatal by its action upon the blood of the animal.—*Boston Med. and Surg. Journal.*

Specific Gravity of the Blood in Disease.—Dr. Hammerschlag draws the following conclusions after a number of examinations of the blood:

1. The specific gravity of the blood depends generally on its amount of hæmoglobin, and is entirely independent of the number of blood corpuscles present.
2. In chlorosis, anæmia, tuberculous diseases and malignant tumors there is always a constant relation between the amount of hæmoglobin and the specific gravity, inasmuch as a certain amount of hæmoglobin causes in different patients the same specific gravity. It is therefore possible to draw conclusions on the amount of the coloring matter in the blood, and it suffices to ascertain the specific gravity of the blood to decide the state of disease.
3. In nephritis it is found that the specific gravity of the blood is lower than the amount of hæmoglobin would indicate.
4. In circulatory disturbances the specific gravity remains generally normal, even if œdema is present.
5. In fever the specific gravity decreases, but becomes normal on defervescence.—*Centralblatt fur Klin. Medizin.*

The Diagnosis of Gastric Ulcer.—In the course of a recent discussion on ulcer of the stomach in one of the London medical societies, Dr. Routh said that electricity assisted in the diagnosis of gastric ulcers; if there were really an ulcer the pain would be intensified on passing the constant current through the painful spot, whereas if no ulcer existed the current would afford relief.—*Med. Rec.*

NEW INSTRUMENTS.

A NEW URETHROTOME.

R. INNIS BROMLEY, M.D., SONORA, CAL.

It is my purpose in presenting this article to introduce a new urethrotome, the principles of which differ from any of those now in use.

All of the urethrotomies in popular use at the present time are provided with but one blade and are intended to be used as single "cutters," the incision being made either toward the front or towards the dorsum of the penis as the inventor thought best that it should be made.

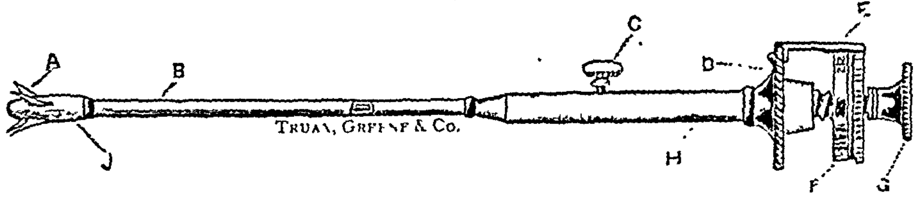

Figure 1.

The instrument which I present contains four knives, and cuts the stricture substance at four points at right angles to each other. The accompanying illustration will give the reader an idea of the instrument.

It consists of a bulb, A, which contains the knives, a slender shaft, B and the handle. The knives are set at right angles to each other and emerge from four slots near the end of the bulb. The knives are so arranged that when pressed upon they slide up inclined planes and emerge from the slots spoken of. They are attached to a slender steel rod which traverses the shaft of the instrument, thence into a piece of metal fitted into the handle which I shall designate, the "plunger." It is here secured by a millet-head screw, C. This forms the connection between the knives and the thumb piece, G. A spiral spring on the handle presses against the plunger and holds the knives in place when not in use.

The length of the blades may be regulated by revolving the disc, F, to any desired number under the index, E. The disc is divided into several numbered spaces ranging from 15 to 40, French measure.

To facilitate cleaning the instrument, I have divided the bulb into two parts: viz., the cap and the base. The division being just in front of the slots. These two parts are fitted together by means of a thread-screw.

In cleaning the instrument, project the knives, relieve the rod by making several turns on the screw, C, at the handle, unscrew the cap from the base of the bulb, withdraw the knives and cap together and finally remove the cap from the knives. The whole manœuver takes but little time.

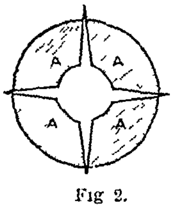

Fig 2.

Altogether, the instrument is very simple. It can be operated with one hand, readily cleaned, and the length of the knives may be known when they are out of sight in the urethra.

It will be seen by the arrangement of the knives, that a stellate incision is made in the structure, thus thoroughly relaxing the tissues. By reference to Fig. 2, which is intended to represent a transverse section (diagramatic) of the stricture cut with my urethrotome, will it not seem reasonable to suppose that the small sectors of tissue denoted by a, a, a, a, are more capable of being contracted, retracted, or absorbed than the band of tissue a in Fig. 3, which is broken at only one point by the single cutting urethrotomes?

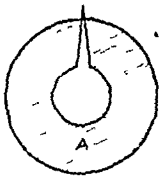

Fig. 3.

In gynecological practice who would think of making but one incision in a constricted vagina when several would more thoroughly relax the fibrous bands? Our best gynecologists suggest and practice free incisions into the fibrous tissues. Why not observe this in dealing with strictures of the urethra? I certainly have had better results with my instruments than with the single cutters.

Moreover, a single incision into the fibrous bands of a urethral structure changes the position of the canal at that point. In Fig. 4, let the inner circle a represent the lumen of a strictured urethra, the center of which is c, b, the normal urethral canal having the same centre. Now, after an operation with a single cutting urethrotome, an incision is made toward the dorsum of the urethra represented in the figure by c, does not the centre of the canal at that point become changed to c and after dilatation will it not occupy the position of the circle b? The new urethra will take the direction under these circumstances, as shown in Fig. 5, producing an abrupt turn in the urethra at the point of operation.

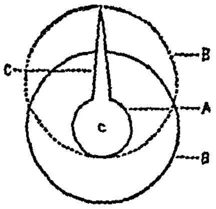

Fig. 4.

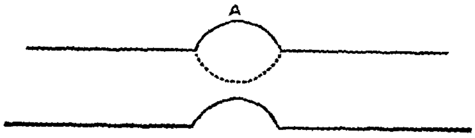

Fig. 5.

While some surgeons may think this trifling or too exacting, I have had patients complain, after being operated on by the "single cutters," of a sense of constriction and an uncomfortable feeling remaining, upon voiding urine, even after I had passed a No. 32 sound.

I believe this to be due to the abrupt turn that I have described. I have naver had a patient so complain after being operated on by my instrument. While I do not believe in simply scarifying the tissues of a stricture, I do not think it necessary to inflict so deep a wound in the tissues as some of the instruments are capable of making in the hands of some surgeons. I also think, that the same results can be obtained by making smaller incisions with my instrument than by the deep incisions of single cutting urethrotomes.

MISCELLANY.

American Academy of Medicine, Preliminary Program.—The following topics are promised for discussion at the 17th annual meeting of the American Academy of Medicine, at the Cadillac Hotel, Detroit, Mich., on Saturday, June 4, and Monday, June 6, 1892:

1. Essentials and Non-essentials in Medical Education, the address of the retiring president, Dr. P. S. Conner, of Cincinnati.
2. The Value of the General Preparatory Training afforded by the College as compared with the Special Preparatory Work suggested by the Medical School in the Preliminary Education of the Physician, a paper by Dr. T. F. Moses, of Urbana, Ohio.
3. Does a Classical Course enable a Student to Shorten the Period of Professional Study, a paper by Dr. V. C. Vaughan, of Ann Arbor, Mich.
4. The Value of a Collegiate Degree as an evidence of fitness for the Study of Medicine, a paper by Dr. L. H. Mettler, of Chicago.
5. The Value of Academical Training, preparatory to the Study of Medicine, a symposium by Drs. H. B. Allyn, of Philadelphia, W. D. Bidwell, of Washington, and Elbert Wing, of Chicago.
6. The Newer Medical Education in the United States, a symposium by Drs. W. J. Herdman, of Ann Arbor, Charles Jewett, of Brooklyn, and Elbert Wing, of Chicago.
7. A paper on some phase of the State Supervision of the Practice of Medicine, by Perry H. Millard, of St. Paul.

Some other papers are partially promised and the usual reports may be expected from the committees.

Members of the profession are cordially invited to be present at the sessions of the Academy.

District Medical Society of Central Illinois.—The Eighteenth Annual Meeting of this Society will be held at City Hall in Pana, Ill., Tuesday, April 26, 1892.

Officers: President, G. W. Fringer, M.D., Pana; First Vice Pres., W. G. Wilson, M.D., Shelbyville; Second Vice Pres., Wm. H. Sparling, M.D., Moweqna; Secretary, J. H. Miller, M.D., 1001 Madison St., Chicago; Treasurer, F. B. Haller, M.D., Vandalia.

Board of Censors: W. J. Eddy, M.D., Shelbyville; J. Huber, M.D., Pana; W. W. Murfin, M.D., Patoka; John A. Prince, M.D., Springfield; Amos Sawyer, M.D., Hillsboro.

Program: Fashions in Medicine, T. J. Whitten, M.D., Jacksonville: Pulmonary Tuberculosis, as seen by a Neighborhood Doctor, Amos Sawyer, M.D., Hillsboro; "What is It?" A Clinical Report. J. H. Miller, M.D., Chicago; Mechanical Treatment of Chronic Rheumatism, L. P. Walbridge, M.D., Decatur; Specific Action of Remedies, J. J. Connor, M.D., Pana.

J. H. Miller, M.D., Sec'y, 1001 Madison St., Chicago.
G. W. Fringer, M.D., Pres., Pana.

National Association of Railway Surgeons.—Annual meeting at Old Point Comfort, Va., May 25–28 inclusive. E. R. Lewis, M.D., Secretary, Kansas City, Mo.; J. H. Murphy, M.D., President, St. Paul, Minn.

Members of the Mississippi Valley Medical Association wishing to go as delegates to the American Medical Association at Detroit, will please send names to Dr. E. S. McKee, Secretary, 57 W. Seventh St., Cincinnati.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from March 19, 1892, to April 1, 1892.

First Lieut. Theo. F. DeWitt, Asst. Surgeon U. S. A., granted leave of absence to include May 16, 1892, at which date his resignation has been accepted by the President to take effect.

Capt. Benjamin Munday, Asst. Surgeon U. S. A., granted leave of absence for one month, with permission to apply for an extension of one month.

Capt. Marshall W. Wood, Asst. Surgeon U. S. A., leave of absence granted is extended one month.

Capt. Edwin F. Gardner, Asst. Surgeon U. S. A., granted leave of absence for one month, on surgeon's certificate of disability.

Capt. R. W. Johnson, Asst. Surgeon U. S. A., leave of absence granted for seven days is hereby extended fourteen days.

The suspension of the operation of Par. 2, S. O. 13, A. G. O., January 16, relating to Capt. Aaron H. Appel and First Lieut. Julian M. Cabell, Asst. Surgeons, is removed.

Capt. C. N. B. Macauley, Asst. Surgeon U. S. A., will report for temporary duty at U. S. Military Academy, West Point, N. Y., during the absence of Capt. Henry S. Kilbourne, Asst. Surgeon U. S. A., as member of the Army Medical Board, New York City, and on return of that officer will rejoin his proper station.

First Lieut. Frank T. Meriwether, Asst. Surgeon U. S. A., ordered for temporary duty at Madison Bks., N. Y., during the absence of Capt. Henry S. Turrill, Asst. Surgeon, as member of Army Medical Board, New York City, and on return of that officer will rejoin station.

First Lieut. Francis A. Winter, Asst. Surgeon U. S. A. (recently appointed), will proceed from St. Louis, Mo., to Jefferson Bks., Mo., and report to the commanding officer of that station for duty.

APPOINTMENTS.

To be Asst. Surgeons with the rank of First Lieutenant:

Francis A. Winter, of Alabama, March 9, 1892. Vice De Hanne, retired from active service.

William E. Purviance, of Illinois, March 9, 1892. Vice Steinmetz, retired from active service.

PROMOTIONS.

Lieut.-Col. Joseph C. Baily, Asst. Medical Purveyor, to be Surgeon with the rank of Colonel, March 9, 1892. Vice Norris, retired from active service.

Major William D. Wolverton, Surgeon, to be Asst. Medical Purveyor with the rank of Lieut.-Col., March 9, 1892. Vice Baily, promoted.

Capt. John O. Skinner, Asst. Surgeon, to be Surgeon with the rank of Major, March 9, 1892. Vice Wolverton, promoted.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending April 2, 1892.

Surgeon D. O. Lewis, from Naval Hospital, Washington, and to Naval Hospital, Mare Island, Cal.

P. A. Surgeon T. A. Berryhill, from the U. S. S. "Pensacola," and to the U. S. S. "Ranger."

Merritt W. Barnum, commissioned an Asst. Surgeon in the Navy from March 15, 1892.

Surgeon W. G. Farwell, granted leave of absence for six months, with permission to leave the United States.

Medical Inspector George W. Woods, from the U. S. S. "Pensacola," and to the hospital at Mare Island, Cal.

Medical Director N. L. Bates, detached from Naval Hospital, Mare Island, Cal., and ordered home.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending March 26, 1892.

Surgeon P. H. Bailhache, to inspect unserviceable property at Port Townsend, Wash., Mch. 9, 1892. Detailed as member of Board for physical examination officer Revenue Service. March 26, 1892.

Surgeon George Purviance, ordered to Washington for temporary duty. March 5, 1892.

Surgeon H. W. Austin, to inspect Service at New Orleans, Savannah and Charleston, and the Gulf and South Atlantic Quarantine Stations. March 3, 1892.

Surgeon Fairfax Irwin, detailed as medical inspector of immigrants, port of Boston, Mass. March 3, 1892.

P. A. Surgeon D. A. Carmichael, to inspect the San Francisco Quarantine Station. March 7, 1892.

P. A. Surgeon J. H. White, ordered to South Atlantic Quarantine for temporary duty. March 26, 1892.

P. A. Surgeon J. J. Kinyoun, to proceed to New York on special duty. March 7, 1892.

P. A. Surgeon T. B. Perry, granted leave of absence for thirty days. March 1 and 14, 1892.

Asst. Surgeon G. M. Guiteras, ordered to examination for promotion. March 23, 1892.

Asst. Surgeon B. W. Brown, assigned to temporary duty at San Francisco Quarantine. March 14, 1892.

Asst. Surgeon J. M. Eager granted leave of absence for thirty days. March 1, 1892.

Asst. Surgeon C. E. Decker, detailed as recorder, Board for physical examination officer Revenue Marine Service. March 26, 1892.

PROMOTION.

P. A. Surgeon J. O. Cobb, commissioned by the President as Passed Asst. Surgeon. March 23, 1892.

The Journal of the
American Medical Association

VOL. XVIII. CHICAGO, APRIL 16, 1892. No. 16.

ORIGINAL ARTICLES.

PRE-COLUMBIAN SYPHILIS AND EAST ASIA.

BY ALBERT S. ASHMEAD, M.D.,
OF NEW YORK CITY.
LATE FOREIGN MEDICAL DIRECTOR, TOKIO HOSPITAL, TOKIO, JAPAN.

Since the publication of my article on pre-Columbian Syphilis in the *Medical News*, October 31, 1891, I have received a few letters on the subject. Professor Brinton does not lay great store by such philological evidence as I have been able to produce. "After careful search," says he, "I have not found any resemblance between any American tongue and any Asiatic dialect; a few isolated resemblances do not signify anything."

Dr. Gustav Brühl, of Cincinnati, the author of "Pre-Columbian Syphilis in the Western Hemisphere" published in the *Cincinnati Lancet and Clinic*, May 29, 1880, and of an article under the same title, March 8, 1890, in the same paper says: "In neither have I tried to prove that syphilis originated in America, trying only to prove that it existed here before the landing of the Castilians. 'Abobe" is not a Nahuatl word, the Nahua called it Xanitl, the Otomics, Notletahoy. Without any doubt it was imported by the Spaniards. 'Huarache' (the sandal) is used by the Mexicans of to-day like 'Adobe', but you find it in no Nahuatl dictionary, the true word being Cactli; or we have to consider it as a corruption of the term Cuetlaxtli, cosa curtida, a tanned thing. Also the physical affinities of the Mexicans and Japanese are not so striking as Mr. Tateno seems to believe. Whether the Chinese 'Fousang' is identical with America, is an open question, by no means settled. The fact that the Inca head-chiefs considered themselves descendants of the Sun, and the Japanese, their country as the 'Sun's cradle,' is ethnologically not the least proof of the common origin of both tribes. What Tarraire affirms of the tribe of Santa Barbara speaking a Japanese dialect, must be taken with great caution. It was once believed that the Otomi of Mexico and the Indians of Eseng in Peru, spoke a dialect related to the Chinese language. We know better now. And I doubt very much if Hon. John A. Bingham was able to judge that the Indian dialects of Ohio had a great many similarities with the Japanese language. Even for a learned linguist it is extremely difficult to decide correctly such a question."

Dr. Brühl in his first article says that Oviedo claimed pre-Columbian existence of syphilis on this Continent. He also quotes from the author of the Historia Apologetica, by Las Casas, who arrived in San Domingo six years after the discovery. He refers to the ancient Quiche Indians of Guatemala, who speak of their deity as Tepeu (Syphilis). It was a token of great power and dignity to cohabit with many women; they believed that promiscuous intercourse was necessary to produce the disease. They considered syphilis as one of the privileges of the nobility. Dr. Brühl also quotes the Toltec's legend of Nanahautl, who was transformed into the Sun, and who was always spoken of as "the Syphilitic." The worship of "El Buboso" flourished to the last days of the Empire. Their three principal syphilitic remedies derive their denomination from the name Nanahuatl (Nanahuatla, Nanahuaquahuitl, Nanahuaxochitl). He refers to the investigation of Prof. Joseph Jones, the result of whose explorations of aboriginal remains in Tennessee appeared in the Smithsonian publications, Washington, 1876. The bones he found, he declares to be of pre-Columbian origin; the burial place of some of them had been under an elm tree, 12 feet in circumference, with 260 rings of growth from circumference to centre, which indicates an age of 250 years. These Tennessee bones were subjected to a test by hydrochloric acid to determine the proportion of organic matter remaining. There was only a mere trace of organic matrix of gelatin; they were consequently "the most ancient syphilitic bones ever found." In his second paper Dr. Brühl takes up the philological side of the problem. The names of the disease among the various ancient races could only, according to him, have originated on this continent before the advent of Columbus; he furnishes plenty of arguments for his conclusion, which is as follows: "In view of the evidence I have gathered from the confessions, customs, religious rites and superstitions, the mythology, materia medica, and the languages of the natives, who will deny the pre-Columbian existence of syphilis in the Western Hemisphere? Neither Clavigero nor the host of his followers, Prof. Mac Lean included, can reason away this stubborn fact. Nor can they make us believe that it was the Spaniards who entailed this everlasting curse upon the aborigines."

There can be but three positions to take with respect to the presence of syphilis in America: Either it existed before Columbus, having its origin here, or it was introduced by Columbus, or it existed before him with an East Asiatic origin.

Professors Brinton, Brühl, Jones and various earlier authorities have concluded that it did exist before Columbus. In this case then, it must be autochthonous or else have come from East Asia. As we have sure knowledge of the existence of syphilis in East Asia long before the Europeans came in contact with it and as we know also that when the latter were inoculated with it, it developed a type as malignant as that which was transferred by Columbus from the ancient races of America to Europe, it is reasonable

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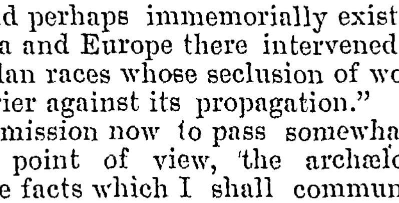
[1] I had quoted in the *Medical News*, a few Aztec words which had been given me by Mr. Tateno, the Japanese Minister to the United States and Mexico, as showing a striking resemblance to some Japanese vocables. I referred in the same article to other similarities.

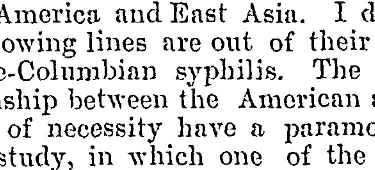
to suppose that the disease in both situations, pre-Columbian America and East Asia, *had the same degree of attenuation.* This may be considered as one of the facts which make the relationship of America and Asia, at least, probable.

Prof. Stillé believes with me that America was not a New World to the Asiatic Orientals. "I have long since felt persuaded," says he, "that America was peopled on the North by the Tartars and Japanese chiefly; in its middle parts by the Chinese; and that the same race which built the vast temples of Hindostan, erected the monuments of Oceanica, Yucatan, Mexico and Peru. No doubt, it seems to me, that syphilis was carried east to America, centuries before it was transported from America to Europe. In Asia it did not travel westward, partly because there was little communication in that direction, and also because between the further Orient, where it had perhaps immemorially existed, and the west of Asia and Europe there intervened the great Mohammedan races whose seclusion of women was a strong barrier against its propagation."

I beg permission now to pass somewhat abruptly to another point of view, the archæological one. Some of the facts which I shall communicate were gathered by myself during my sojourn in Japan. I do not know whether they have ever been referred to by any other observer. They show, I believe, a strange relation between mound building and serpent worship in America and East Asia. I do not think that the following lines are out of their place in a paper on pre-Columbian syphilis. The question of the relationship between the American and Asiatic races, must of necessity have a paramount importance in a study, in which one of the queries is: did the disease come from East Asia or not?

Twenty-eight miles from Tokio, in Gumma-ken, near Takasaki, there are several very ancient mounds; they have the shape of Japanese wine-gourds (hyotan). From 1,500 to 2,000 years is their supposed age. My venerable friend, Mr. Osaki, of the province of Isé, where such constructions were familiar to him, being on a visit to Takasaki, discovered such a mound on a farmer's property. Mr. Osaki knew how to take his bearings in such affairs; he effected an entrance through the smaller division of the building, where he found some evidences of a wooden doorway long gone; he discovered also a stone passage way leading to the larger compartment. The smaller compartment contained the remains of several bodies, the larger one a stone tomb. Prying off the stone lid of that receptacle, which was shaped like a Japanese trunk, he found a body imbedded in the stone, its head to the North, as usual. Swords, gold rings, helmets, bowls, necklaces and some finely polished agate stone ornaments, of different colors, in the shape of rings and tubes were found with the body. These relics, I am informed, are now in the National Museum at Uyeno.





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The gourd-shaped mounds, says Mr. Osaki, some of them measuring 150 feet in length, and 30 to 50 in height, are found in many parts of Japan, principally in Isé, Yamato, and Yamashiro, and in various situations. It is his opinion that they are what is called there, "misasagi," that is, *imperial* tombs. The presence of the gold trinkets, which, at such an early date, could have belonged only to the very great, and the fact that in one case, at least, the body had been preserved in vermilion, speak strongly for his view. Mr. Osaki also thinks that the smaller compartment of these mounds is the burial place of the *attendants or relatives of the Emperor; in those* days the custom still obtained to bury with the prince, his servants, alive.

It has long been surmised by the student of mound building in Ohio, that these mounds also are burying places of important persons. It could be shown in one case at least, that a human sacrifice had been a part of the funeral ceremonies. A connection between this architecture and serpent worship has also been established. In the so-called *serpent mound* of Ohio, the figure three seems to be mystically conspicuous; its triangular head points to the three streams[2], its body has three folds, its tail three coils; thus the shape of the body gives us three times three.

The typical serpent in the ancient Japanese worship was a nine-headed snake, and thus exhibited the sacred number three multiplied by itself: the holy San-san-ku-do (three times three are nine.) For those who are more than superficially interested in Japan, I give the following details with regard to the origin of serpent worship in that country. Thirteen miles from Nagano-ken in Shinano, there is a high mountain, always snow-topped, which was already held in deep reverence during five long-lived generations preceding Jimmu-Tennô, who himself lived about 660 years before Christ. Tenshogodaijin, the greatest of the Japanese deities, the Goddess of the Sun, horrified by the sight of the world's wickedness, went and hid herself in a cave of that holy mountain, Amano-Iwaya, the cave of Heaven. Thus, the world fell naturally into darkness. The counsellors of the departed queen now met, and cast about for some means of bringing their mistress out of her concealment. It was hoped that the charms of music would answer the purpose; in pursuance of this resolution, all the choirs of the world were called together at the mouth of the goddess' cave. She put the door ajar to listen, as the plotters had expected; they at once pulled the door off and carried it away to Toga-kushi, where they hid it in safety. A notable temple is still there as a monument of these mythical events. From the hiding place of "the hidden door" (Toga-kushi), a large snake with nine heads, emerged, and at the sight of the guardian, took refuge in the cave. Being there treated with the utmost consideration and especially well-fed, he grew so large that he could not get out again. It was from this time that the snake was worshipped as a god, and an almighty god at that, for it sends rain when properly asked for it, deserving well the name of the *god of irrigation*.

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[2] The soul must pass over the river of the three paths, the Japanese river Styx. The paths lead respectively to Paradise, Humanity and Perdition.

There are hundreds of snake chapels all over the land, especially in small coast villages, besides this large temple of Toga-kushi. They are usually from five to eight feet square. Upon an altar stands a painted serpent, in wood or earth, with head erected as in the act of striking. As to the great temple, it is entitled to receive the visit of every Japanese, at least once in his life; for are not in this slippery god the solar divinity and the serpent divinity united?

It is a curious remark that the metempsychosis of Japan recognizes only one exception to the general receptivity of nature for the departed souls of men; the snake is reserved for divine spirits, and its body can never be the tenement of what has been formerly humanity. No woman is allowed to go to the great temple; this also is an evidence of the great regard in which it is held. Among the animals worshipped in Japan, there are many represented with nine heads or nine tails. As already stated, three times three is a holy number. It is even essential to the holiness of marriage; the passing of the wine cup from the person who has negotiated the union, to the bride and groom, three times round, with the words, san-san-ku-do, completes the sacrament.

In any transaction in which the number nine has to be used, they will say, san-san-kudo, to make the pledge particularly binding. It is not improbable that there is a close connection between their worship of the serpent and the dragon worship of the Chinese.

No one who follows with interest the study of our ancient races can find these remarks entirely superfluous. There is little doubt but that the importance which the sun and the serpent hold in the religions of pre-Columbian America, is rooted in traditions brought to this country from what, as time and observation go on, we become more and more inclined to consider as the colonizing mother of our primitive populations.

THE CAUSE, CONDITION, PREVENTION AND CURE OF DRUNKENNESS

A Sabbath Evening Address

BY W. L. SCHENCK, A.M., M.D.,
OF TOPEKA, KAN.
PROFESSOR OF PREVENTIVE MEDICINE, KANSAS MEDICAL COLLEGE, ETC.

For an address upon the *cause, condition, prevention and cure of drunkenness* we find in the sacred volume many appropriate texts,—"Who hath woe? who hath sorrow? They that tarry long at the wine." "Wine is a mocker, and strong drink is raging, and whoso is deceived thereby is not wise." "Look not upon the wine, for at the last it biteth like a serpent and stingeth like an adder."

Drunkenness reaches back to the earliest records of our race. Sacred history tells us that the ninth generation from Adam was so besotted and debased that all mankind, save only Noah and his family, were destroyed, and that notwithstanding this terrible judgment, soon after the waters of the great flood had subsided, he planted vineyards, made wine, got drunk, and cursed his son with a grievous curse for beholding the nakedness of his debauch.

All down the ages, in palace and cottage, men have read in the handwriting of the Almighty, "Thou art weighed in the balance and art found wanting." All alike have found wine a mocker, and that whoso is deceived thereby is not wise. All down the ages fitful efforts have been made for the prevention and cure of drunkenness; but while humanity has been slowly uplifted, and sobriety has steadily gained ground, alcohol still remains the great destroyer of life and all that makes life desirable.

Let us see, if we can, why an evil so great and so apparent continues so persistent and so widespread.

Alcoholics are most seductive lethals, giving temporary relief from pain and anguish, meanwhile causing and covering disease until it is often beyond cure. They cause disease both through their chemical affinities and therapeutic action, and their continued use producing toleration and demands increased potations. Both the habit and the disease produced tend to overwhelm will power.

The will dethroned, and all the conditions for which the lethal is taken increased, the drink habit reigns supreme. Thus thousands drink to drunkenness, when all around they behold men of genius, culture and piety, stronger men than they, who have walked in the pathway they are treading, until they are not only physical wrecks, but until, through degradation of the cells through which spirit acts, many have become irresponsible maniacs.

The causes of drunkenness lie largely in the relation of spiritual and physical life, their mode of connection and their constantly exerted reciprocal influence, and the difficulties in their investigation are found in our limited knowledge of life, and the bond that unites soul and body. Yet we know that whilst united, the soul acts through the instrumentality of the body, and is the stimulus to the development of the cells through which it acts, and we know that, by a law of spiritual life, the spirit is transformed into the image of its worship. If it worships the God of truth, justice and mercy, the Infinite Love, it is lifted ever nearer to Him. If it bows down to Bacchus, it becomes as debased as the god of wine.

Judging from mental and moral action in certain conformations of the brain, and after injuries of various parts of the great nervous centre, we conclude that the different attributes of the soul act through special nerve cells, to which they are the normal stimulants, and that their healthful and harmonious, or inharmonious and faulty development, are largely dependent upon their properly regulated activity. Perhaps nothing strengthens this thought more than drunkenness. Though the average drunkard may be an easy, good-hearted fellow—a typical Rip Van Winkle, many brilliant men, men possessing every variety of talent and every shade of character, men renowned in every profession and vocation, yielding to this temptation, have all alike become helpless, hopeless drunkards.

It is evident, then, that we must seek the primal cause of drunkenness in the imperfect or irregular development and nutrition of the cells through which the conscience and will act. It is a law of the physical economy, applicable alike to every part, that regular, systematic exercise, use, with appropriate intervals of rest, not only invites nutrition to the part, but stimulates appropriation, replacing the cells to suppose that the disease in both situations, pre-Columbian America and East Asia, *had the same degree of attenuation.* This may be considered as one of the facts which make the relationship of America and Asia, at least, probable.

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I beg permission now to pass somewhat abruptly to another point of view, the archæological one. Some of the facts which I shall communicate were gathered by myself during my sojourn in Japan. I do not know whether they have ever been referred to by any other observer. They show, I believe, a strange relation between mound building and serpent worship in America and East Asia. I do not think that the following lines are out of their place in a paper on pre-Columbian syphilis. The question of the relationship between the American and Asiatic races, must of necessity have a paramount importance in a study, in which one of the queries is: did the disease come from East Asia or not?

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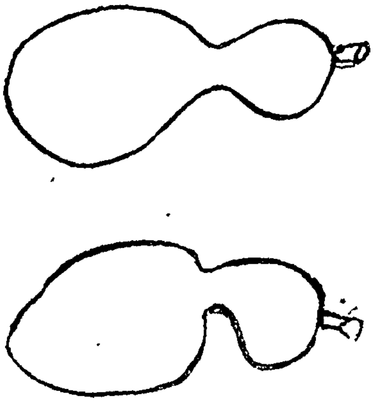

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The gourd-shaped mounds, says Mr. Osaki, some of them measuring 150 feet in length, and 30 to 50 in height, are found in many parts of Japan, principally in Isé, Yamato, and Yamashiro, and in various situations. It is his opinion that they are what is called there, "misasagi," that is, imperial tombs. The presence of the gold trinkets, which, at such an early date, could have belonged only to the very great, and the fact that in one case, at least, the body had been preserved in vermilion, speak strongly for his view. Mr. Osaki also thinks that the smaller compartment of these mounds is the burial place of the attendants or relatives of the Emperor; in those days the custom still obtained to bury with the prince, his servants, alive.

It has long been surmised by the student of mound building in Ohio, that these mounds also are burying places of important persons. It could be shown in one case at least, that a human sacrifice had been a part of the funeral ceremonies. A connection between this architecture and serpent worship has also been established. In the so-called serpent mound of Ohio, the figure three seems to be mystically conspicuous; its triangular head points to the three streams[2], its body has three folds, its tail three coils; thus the shape of the body gives us three times three.

The typical serpent in the ancient Japanese worship was a nine-headed snake, and thus exhibited the sacred number three multiplied by itself: the holy San-san-ku-do (three times three are nine.) For those who are more than superficially interested in Japan, I give the following details with regard to the origin of serpent worship in that country. Thirteen miles from Nagano-ken in Shinano, there is a high mountain, always snow-topped, which was already held in deep reverence during five long-lived generations preceding Jimmu-Tennô, who himself lived about 660 years before Christ. Tenshogodaijin, the greatest of the Japanese deities, the Goddess of the Sun, horrified by the sight of the world's wickedness, went and hid herself in a cave of that holy mountain, Amano-Iwaya, the cave of Heaven. Thus, the world fell naturally into darkness. The counsellors of the departed queen now met, and cast about for some means of bringing their mistress out of her concealment. It was hoped that the charms of music would answer the purpose; in pursuance of this resolution, all the choirs of the world were called together at the mouth of the goddess' cave. She put the door ajar to listen, as the plotters had expected; they at once pulled the door off and carried it away to Togakushi, where they hid it in safety. A notable temple is still there as a monument of these mythical events. From the hiding place of "the hidden door", (Toga-kushi), a large snake with nine heads, emerged, and at the sight of the guardian, took refuge in the cave. Being there treated with the utmost consideration and especially well-fed, he grew so large that he could not get out again. It was from this time that the snake was worshipped as a god, and an almighty god at that, for it sends rain when properly asked for it, deserving well the name of the *god of irrigation*.

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[2] The soul must pass over the river of the three paths, the Japanese river Styx. The paths lead respectively to Paradise, Humanity and Perdition.

There are hundreds of snake chapels all over the land, especially in small coast villages, besides this large temple of Toga-kushi. They are usually from five to eight feet square. Upon an altar stands a painted serpent, in wood or earth, with head erected as in the act of striking. As to the great temple, it is entitled to receive the visit of every Japanese, at least once in his life; for are not in this slippery god the solar divinity and the serpent divinity united?

It is a curious remark that the metempsychosis of Japan recognizes only one exception to the general receptivity of nature for the departed souls of men; the snake is reserved for divine spirits, and its body can never be the tenement of what has been formerly humanity. No woman is allowed to go to the great temple; this also is an evidence of the great regard in which it is held. Among the animals worshipped in Japan, there are many represented with nine heads or nine tails. As already stated, three times three is a holy number. It is even essential to the holiness of marriage; the passing of the wine cup from the person who has negotiated the union, to the bride and groom, three times round, with the words, san-san-ku-do, completes the sacrament.

In any transaction in which the number nine has to be used, they will say, san-san-kudo, to make the pledge particularly binding. It is not improbable that there is a close connection between their worship of the serpent and the dragon worship of the Chinese.

No one who follows with interest the study of our ancient races can find these remarks entirely superfluous. There is little doubt but that the importance which the sun and the serpent hold in the religions of pre-Columbian America, is rooted in traditions brought to this country from what, as time and observation go on, we become more and more inclined to consider as the colonizing mother of our primitive populations.

THE CAUSE, CONDITION, PREVENTION AND CURE OF DRUNKENNESS

A Sabbath Evening Address

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For an address upon the *cause, condition, prevention and cure of drunkenness* we find in the sacred volume many appropriate texts,—"Who hath woe? who hath sorrow? They that tarry long at the wine." "Wine is a mocker, and strong drink is raging, and whoso is deceived thereby is not wise." "Look not upon the wine, for at the last it biteth like a serpent and stingeth like an adder."

Drunkenness reaches back to the earliest records of our race. Sacred history tells us that the ninth generation from Adam was so besotted and debased that all mankind, save only Noah and his family, were destroyed, and that notwithstanding this terrible judgment, soon after the waters of the great flood had subsided, he planted vineyards, made wine, got drunk, and cursed his son with a grievous curse for beholding the nakedness of his debauch.

All down the ages, in palace and cottage, men have read in the handwriting of the Almighty, "Thou art weighed in the balance and art found wanting." All alike have found wine a mocker, and that whoso is deceived thereby is not wise. All down the ages fitful efforts have been made for the prevention and cure of drunkenness; but while humanity has been slowly uplifted, and sobriety has steadily gained ground, alcohol still remains the great destroyer of life and all that makes life desirable.

Let us see, if we can, why an evil so great and so apparent continues so persistent and so widespread.

Alcoholics are most seductive lethals, giving temporary relief from pain and anguish, meanwhile causing and covering disease until it is often beyond cure. They cause disease both through their chemical affinities and therapeutic action, and their continued use producing toleration and demands increased potations. Both the habit and the disease produced tend to overwhelm will power.

The will dethroned, and all the conditions for which the lethal is taken increased, the drink habit reigns supreme. Thus thousands drink to drunkenness, when all around they behold men of genius, culture and piety, stronger men than they, who have walked in the pathway they are treading, until they are not only physical wrecks, but until, through degradation of the cells through which spirit acts, many have become irresponsible maniacs.

The causes of drunkenness lie largely in the relation of spiritual and physical life, their mode of connection and their constantly exerted reciprocal influence, and the difficulties in their investigation are found in our limited knowledge of life, and the bond that unites soul and body. Yet we know that whilst united, the soul acts through the instrumentality of the body, and is the stimulus to the development of the cells through which it acts, and we know that, by a law of spiritual life, the spirit is transformed into the image of its worship. If it worships the God of truth, justice and mercy, the Infinite Love, it is lifted ever nearer to Him. If it bows down to Bacchus, it becomes as debased as the god of wine.

Judging from mental and moral action in certain conformations of the brain, and after injuries of various parts of the great nervous centre, we conclude that the different attributes of the soul act through special nerve cells, to which they are the normal stimulants, and that their healthful and harmonious, or inharmonious and faulty development, are largely dependent upon their properly regulated activity. Perhaps nothing strengthens this thought more than drunkenness. Though the average drunkard may be an easy, good-hearted fellow—a typical Rip Van Winkle, many brilliant men, men possessing every variety of talent and every shade of character, men renowned in every profession and vocation, yielding to this temptation, have all alike become helpless, hopeless drunkards.

It is evident, then, that we must seek the primal cause of drunkenness in the imperfect or irregular development and nutrition of the cells through which the conscience and will act. It is a law of the physical economy, applicable alike to every part, that regular, systematic exercise, use, with appropriate intervals of rest, not only invites nutrition to the part, but stimulates appropriation, replacing the cells worn out by use, keeping the part strong and vigorous, and moulding it to definite purpose. Mental and moral action is the stimulus to the cells through which the intellectual and moral man acts, and develops them in harmony with the laws whereby muscular and glandular activity develops muscle and gland.

While we may not be able to demonstrate the changes these cells undergo through the activities of a spiritual life that tends to drunkenness, as neither microscopy nor chemistry reveal any change that can be called disease, prior to drunkenness, we know there is an acquired or inherited type of tissue that impels to alcoholism. Disease is never hereditary, but only cell formation, tissue types, prone to defective action and specific degeneration. Abundant observation proves that, in the predestined drunkard, there is some defect in that portion of the organism through which will and conscience act, and that it is associated with every degree of general health, and usually capable of correction.

When the Creator breathed into vitalized matter a spirit that can think, and reason, and will, the body became clay in the hands of the potter, and in considering the great problems of life, we must grasp both ends of the chain—the one that is obedient to law, and the one that is a law unto itself; the one that binds us to time and the one that links us to eternity. Spirit of His spirit who created all worlds, working in harmony with His laws, the spirit of man may mould the body through which it acts into a fit instrument for its noblest aspirations, while yielding to the lusts of the flesh, a gross animalism will degrade us to the level of the beast.

While reason and conscience rarely fail to admonish those who drink, a will force that neglects or refuses to regard their warning voice, permits them to "sow to the wind and reap the whirlwind." Drinking again and again, saturating the body with a poison that degrades the whole organism, the organ of will meanwhile becoming more and more easily hebetized, and exercising less and less power, man drifts, the helpless victim of a relentless destroyer.

Wrong-doing continually resisted fortifies the soul until it can say to every temptation, "Get thee behind me, Satan;" while to those who persistently yield to temptation, "trifles light as air are burdens too heavy to be borne." All that strengthens the will and uplifts the soul gives it power over the flesh and the lusts thereof. All that brings its hopes and aspirations, its life, into greater harmony with its spiritual Father, is evolution. "As many as are led by the Spirit of God, they are the sons of God." "Blessed are they who do hunger and thirst after righteousness, for they shall be filled."

While a strong animal life is essential to a strong spiritual life, the spirit must keep its appetites and passions within due bounds. It must be victor or victim.

Good authority pronounces 60 per cent. of the remote or predisposing causes of drunkenness hereditary, 20 per cent. due to injury or disease, 10 per cent. consequent upon nerve shock, and 10 per cent. produced by various other causes.

The exciting causes are physical, mental or moral suffering, any pain or strain, association or surrounding that tends to override conscience and will, and seeks relief in anæsthesia, rather than through the strength gained by the healthful activities of a nobler manhood. True heroism conquers obstacles and overcomes difficulties. and every victory gives strength for nobler achievements. Life is a battle with all, and in all

"There is always somewhere a weakest spot,"

and no man is stronger than this weakest spot. It often lies in the temptation to an intoxicant that enables man to give rein to the pleasures of the passing hour, without a care beyond, and to find relief from painful or depressing sensations or emotions of soul, or mind, or body, in its lethal action. But it is a lethal that, as was remarked long ago, "maketh a man to forget his brethren, and draw his sword against his best friends;" a lethal that destroys self-respect and self-control. When the will has once permitted the "mocker," alcohol, to control it, it is ever after anæsthetized by the smallest quantity of the poison, no matter for what purpose taken. When he who has once been a drunkard yields to *temptation*, he drinks to drunkenness.

I once had occasion to prescribe an alcoholic for an intelligent and conscientious old physician. He said, "I don't like to take it, doctor, I was once a drunkard." "Oh!" I replied, "that was thirty years ago. You need not be afraid." When I called the next morning he said, "Never prescribe alcohol again for a man who has once been intemperate. After you left me last evening I felt the same impulse to drink to drunkenness that moved me years ago, and had I not had strength to throw the bottle out of the window, would be drunk now."

Not only is every part of the body developed in harmony with its activities, but developed peculiarities are transmitted from generation to generation, and in no part of the body is heredity more marked than in that through which the spirit acts. The degeneration may not always be the same, but the spirit bears its impress as truly as the song of the singer the impress of his vocal organs, and no plea of ignorance will change the laws by which the Almighty governs the universe of matter, organized or unorganized. "I the Lord thy God am a jealous God, visiting the iniquities of the fathers upon the children unto the third and fourth generation of them that hate me (disobey me), and showing mercy unto thousands of them that love me and keep my commandments." "Of thorns men do not gather figs, nor of a bramble bush gather they grapes."

When we have disregarded the dictates of conscience and reason, trodden under foot the will, and submitted to an ungoverned animalism, we have debased the "temple of the holy ghost," the home wherein the spirit dwells, the physical organism through which it acts, and not only shall we reap what we have sown, but we will transmit to our children organisms that will give vice an easy victory over virtue.

Acquired predisposition to intemperance arises from various habits and surroundings, as well as from lack of self-respect and proper regard for the opinions of mankind. All social drinking, and all vocations that tend to degrade and debase are predisposing causes. Those who go in the way of temptation feel the need of a lethal that will enable them to hide themselves from themselves, when, like the hunted ostrich, with his head beneath his wing, they fain believe their sins covered out of sight. Take an illustration. "He that killeth by the sword must be killed by the sword," is not an unmeaning platitude.

The rum seller invariably follows in the footsteps of his victims. Handling, tasting, drinking, making others drunken, notwithstanding the horrible examples about him, he is soon numbered among them, and by his surroundings and his heredity he taints the whole line of his posterity. There is a grim justice in the laws of the Almighty.

In illustration of the effects of an honorable vocation we need only refer to the railway service, with its 22,000 injuries, and 2,500 deaths during the past year, many of them consequent upon the confusion incident to the use of alcoholics. Railway management recognizes its danger and most companies have rigid rules against the use of spirits by employees, though they rarely reach the management. Yet despite these rules, the irregular life, the long hours of duty, with their sense of danger and intense mental tension, strongly tempts to some anæsthetic that will give temporary relief, and alcohol is the most convenient and popular. The frequency with which they yield to temptation emphasizes the importance of ample time for rest and repair.

Nationality is a predisposing cause of drunkenness because it marks types of mental and moral development of civilization. That civilization is highest which develops the whole man, that makes a strong animal life a fit medium for the activities of a spirit that can mould it to its highest purposes. In the highest attainable civilization there can be no drunkenness. "Righteousness will cover the earth as the waters will cover the sea." The savage has not learned to govern his appetites, to subdue his passions and to keep himself within due bounds, and he does not know the evils of intemperance. Nations whose subjects are deprived of independence and oppressed, having little stimulus to self-control, and mental and moral culture, with strong temptations to drown life's sorrows in the sparkling bowl or foaming mug are prone to intemperance.

For illustrations we need only look at the Indian on our frontier, and glance at the names of those who run the distilleries and keep the grog-shops of America.

Though our American life is full of the unrest and anxiety that tends to drunkenness, the self-control that must characterize all successful popular government makes us the most sober people on the face of the earth. The large proportion of our drinking is among our foreign born population, and in our higher civilization the drink habit reaches it acme in the anxieties of the political arena and among those who are "so English, you know," so French, so German, who like children seek to seem larger than they are by aping the follies of those of older growth.

Time forbids further notice of the many exciting causes of drunkenness, and compels us to hasten to preventive measures. However brilliant cures, if prevention is ever better than cure, it is in drunkenness. Finding its primal cause in a weak power of resistance, made weaker every time it yields to temptation, the drunkard is only safe when "delivered from the body of this death" he ceases to "find a law in his members warring against the law of his mind, and bringing him into captivity"; when he has found a home in a "land without a storm."

So long as in our human weakness the great regulating powers of conscience and will are over-ridden by alcohol, so long as sickness and sorrow, pain and anguish tempt men to seek relief in that which at last "biteth like a serpent and stingeth like an adder," so long as rum, acting on unstable organisms, destroys self-respect, develops recklessness, and tends to every type of debasement, and is the mad force that has impelled the resistless mob from the days of Sodom until now, the interests of the State, the church and humanity, all demand as a preventive, *prohibition*, and a prohibition that will prohibit those who are "not wise" from seeking relief through an oath in an anæsthetic that leads to drunkenness. Whether alcoholism is a weakness, a disease or a degeneration, it is the great curse of humanity, and the State is bound to use the same care for its removal that it uses for the removal of small-pox. Until it has destroyed susceptibility to septic disease, and applied the remedy to every human being, its duty is clear. and while it is renewed in every new-born life the duty is perpetual. Alcohol diseases and destroys a larger proportion of mankind than septic disease, and until susceptibility to this great intoxicator is forever destroyed, it is the duty of the State to corral the destroyer. While we protect the tempted, by removing the temptation, we must destroy susceptibility. The chief means to this end is education. By education we do not mean simply teaching that whisky is bad. that drunkenness is bad, that dram-selling is bad nor that alcohol ($C_4 H_{10} O$) through its chemical affinities will deoxidize the tissues, coagulate the albumen of the body, and destroy its hemaglobin, that it will produce indigestion, with all its train of sequences, hob-nail liver, granular degeneration of the kidneys, tuberculosis of the lungs. and every form of nervous and mental disease, that it will arrest physiological metamorphoses, the sign and scource of health, and make the drunkard the opprobrium of both the physician and surgeon. but an education that will develop power to avoid what is wrong, and to do what is right. Wrong-doing comes more frequently from lack of will force than from lack of knowledge. We must not only teach our children to sing, "Have courage my boy to say no," but through proper education we must develop in them an organism that will enable them to resist every appearance of evil.

In our misguided love we too often indulge the whims of our children, and prepare them to "float on flowery beds of ease" when we know "Jordan is a hard road to travel," and that they must fight if they *would win.* "Train up a child in the way he should go," give him moral force, "and when he is old he will not depart from it." Education that develops rightly directed, persevering determination, gives more than genius. It gives a strength and nobility of character that instead of dodging behind anæsthetics and opiates conquers success, and it does have a logical and physiological basis.

The church, a religion that teaches the incarnation of God in humanity, and develops spiritual strength through communion with the All Good, that inspires loftier aspirations and to a nobler life, assures both physical and spiritual evolution. It prevents intemperance and saves from intemperance by impelling its votaries to follow the advice of Cromwell to his army —"Trust in God as though He would do all things, but fight on as though He would do nothing." It saves from drunkenness by enfolding the drunkard in its arms of love, and strengthening him through a human sympathy made divine through the love of Christ. But if its members gather up their garments and pass by on the other side lest they suffer defilement from contact with one who has known this human weakness, the church will be defiled and the poor inebriate who was seeking salvation through its portals will fall, not because the religion of Christ cannot save, but because there was so little of its life-giving love in His professed followers.

Temperance organizations, like the church, are both preventive and curative. They teach the young to make straight paths, and say to the drunkard, "stand up, thou art a man." They develop both the importance and the power of resisting temptation, and have been and are, a great factor in moulding a better public opinion, and uplifting humanity. But for the Washingtonians, the Sons of Temperance, the Templars of Honor, and the ever faithful W. C. T. U., drunkenness would fill the land.

We sometimes hear it said in the olden time when liquors were kept upon the sideboard and drank by all there was less drunkenness than under prohibition and the teaching of temperance societies. Neither logic nor statistics confirm the assertion. It is the argument of the rum-sellers, who "by their craft, have their wealth."

And what of such reformatories as the prison and the rock-pile? They are relics of the unwisdom and barbarism that sought to cure the insane with faggot and fire, the straight jacket and the lash. They increase the sense of degradation and the demand for lethals. They are the methods of an accursed traffic that seeks to throw all the odium upon its victims. The only excuse for their existence is, they protect society againt the madness of drunkenness.

What of reformatories and asylums for the treatment of habitual drunkenness? Just now it is the fashion to condemn them as failures. Reports made months and years after discharge both in Europe and in America, show from thirty to seventy per cent. of those treated for six or twelve months, cured. That the intemperate may be protected against themselves and be saved to the State; that society and the State may be protected and enjoy the benefits accruing from sound lives, the several States and the national government should establish restorative homes, where those convicted of drunkenness before the courts, those pronounced habitual drunkards after proper legal investigation, and those making voluntary application may be received and given the mixed physical, mental and moral treatment essential to their condition, and if, as we have shown, drunkenness is largely consequent upon a deterioration of the physical organism, and especially some part of the brain, intelligent treatment, adapted to each individual case, will save a large proportion of its victims. And surely when the State and national government receive, through licenses and taxes, the price of blood, they should do what they can to cure the drunkard.

Perhaps I may be expected to refer to what is known as "the Keeley cure." If our view of drunkenness is correct, and it does not fear successful contradiction, it cannot be cured by a fortnight or two of treatment with drugs, but its victim must heed the advice of the physician to Lady Macbeth "therein the patient must chiefly minister to himself." Keeley has done much good by his persistent advertisement of the great number of distinguished men, honorables, lawyers, doctors, divines, etc., who have become drunkards, and from the vast income he receives from his "cure," he has demonstrated in a practical way, "who hath sorrow," and that alcohol at last "biteth like a serpent and stingeth like an adder." For the past year he has been persistently advertised by a great Chicago daily in much the same way that a few years ago (1878) it advertised D'Unger's red cinchona cure, but D'Unger died in the gutter before he got up a boom. The Keeley cure was brought most prominently before the public in a brilliant article in the *North American Review* from the pen of Col. John F. Mines, who says he went to reformatories and they failed to cure him, but Keeley promised me a cure and *I am cured.* Unfortunately before the ink on his article was dry he died at Blackwell's Island of drunkenness. I suppose we all have some excuse for our failures. In the next number of the *Review* Keeley explains that Col. Mines was peculiarly unstable and that he never had any hope of him. Over whatever road he may have reached the goal, in every man who has become a drunkard there is always what is known as a state of unstable nervous equilibrium, and persons in this condition are always more or less benefited by any treatment that is mysterious and impressive. The methods practiced at Dwight are full of hypnotic suggestion, and shrouded with all possible mystery, while they allay nervous irritability, give tone to the organism, and carried to toleration produce positive impressions. As in the case of Mines, they make the patient feel that something is being done, and so, for longer or shorter periods, produce happy results. But he who putteth on the armor of righteousness should not rejoice as him that taketh it off.

But what is new, what is true, what is enduring in the "Keeley cure?" We are told it is a secret. Science wrests all secrets from both nature and art. *A Secret!* Whether Keeley knows little or much, who have been his teachers? The great and good men in the medical profession, in the interests of humanity, have made known all their discoveries. The physicians and surgeons who treat your injuries and diseases, are debtors to their predecessors and colleagues. Freely they have received and freely they give. Physicians know that secret nostrums, like "the bichloride of gold cure" contain no gold except what goes into the pocket of him who knows enough to keep and advertise his secret.

In his first Chicago address Keeley said he withheld it from the profession because if put into their hands they would destroy its efficiency. Will wisdom die with him! The important discoveries of the profession, painless surgery, bloodless surgery, antiseptics, all that are valuable have had their bounds of usefulness enlarged, while its pathway is strewn with the skeletons of secret nostrums.

Keeley says drunkenness is a disease consequent upon the drink habit. Herodotus said 400 years B. C., "In drunkenness both the body and mind are sick." It is a disease, as we have shown, of every fibre of the body, of every attribute of the soul, but what of the habit that permits of its development? And in what disease is it possible to grind out health with so many turns of the crank, so many "shots" and so many "dopes" for so many days. Every disease and every case of disease demands an individual diagnosis, prescription and treatment.

Most of those who go to Dwight have been men of character, whose business and social interests present strong incentives to a better life; men who are tired of the bondage of alcohol, who are willing to confess their weakness, to go anywhere, to do anything, to give all they have for a return to sobriety. I heard a minister say a few weeks ago, when inviting persons to the altar, "when you are willing to arise and come to the altar you are half saved." When the drunkard has started for Dwight, when he has said by the grace of God I will be saved! he is half saved, and removal from old associations, the worry of business and the turmoil of life, is a large part of the other half. After a fortnight's treatment, through the impress of his resolution, his surroundings and his medication, in the joy of his heart he feels like shouting with Col. Mines, "saved, saved." Who has not heard the convert at the altar cry, "Bless the Lord, Oh my Soul!" Who has not known him when clad in the armor of some temperance organization rejoice in his strength and salvation. When after three week's treatment at Dwight, if all rules have been obeyed, the drunkard is "graduated," and those who have obeyed orders are pronounced cured and are told they must not drink again, that if they do they need not return. Does not the church and the temperance societies give the same advice, only the church adds "seventy times seven," and continued prayer for deliverance from evil.

In his last Chicago address Keeley is reported to have said to get drunk and to become a drunkard is no more immoral or disreputable than to get typhoid fever, that drunkenness has no hereditary or predisposing causes, but is merely a habit acquired by cultivation. To cultivate a habit that leads to the deep damnation of drunkenness, without any predisposing or hereditary impulse, would seem the height of immorality, fully warranting the assertion of St. Paul, "Be not deceived, neither fornicators, nor idolators, nor thieves, nor drunkards shall inherit the Kingdom of God." He condemns physicians, temperance organizations and churches, who do not approve his theories and methods, when the very name of his cure is a fraud—"Bichloride of gold cure" that probably does not contain the sixtieth Hannemannic dynamization of gold.

He advises his "graduates" to form clubs and to meet and strengthen each other in the new life they are striving to lead, and may the blessing of God be with every such club, and all its members. But has not the church through all time been just such a refuge from human weakness and temptation? Has not its cry ever been "Ho! everyone that thirsteth, let him come and drink of the water of life, without money and without price," and has not that been the work of all temperance organizations, but more than that they seek to save men from drunkenness and to lift humanity above the plane of temptation. Be not deceived, there is no highway to holiness. They who have permitted drunkenness or other debasement, have suffered physical, mental and moral degradation and henceforward they must "watch lest they enter into temptation." All down life's pathway they will hear syren voices luring them from the way that leads to the Celestial city.

The Keeley institutes seem to make a specialty of ministerial endorsements. With all due respect for the clergy, we believe since the dark ages, when the practice of medicine was largely divided between monk and barber, divinity and medicine have been permanently divorced. While the doctor of divinity seeks to comprehend the abstractions of metaphysical theology, moral science and the power of love, he knows so little of the physicial man, "fearfully and wonderfully made," and of physiology and pathology, therapeutics and practical medicine, that his endorsement of a secret nostrum would seem a valueless assumption.

Every fibre in the warp and woof of humanity groans under the curse of intemperance. It fills insane asylums, poor-houses and penitentiaries. It means poverty and desolation, crime and degradation. It means once happy homes turned into hells, and widow's tears and orphan's sighs. It means untold physical, mental and moral agony, and the annual destruction of hundreds of thousands of lives, and of all that makes life worth living. It means forfeited inheritance to the kingdom of God.

If any man believes he has found a remedy for its unbounded woes, a remedy that will cure 95 out of every 100 drunkards of their drunkenness in three weeks, giving health and peace, hope, joy and salvation, to millions beyond his reach, and refuses to give it to the world, we need not say what manner of man he is, but only that he has no kinship so Him who for the salvation of his race could say "the foxes have holes and the birds of the air have nests, but the son of man hath not where to lay his head."

But I may be told Keeley sends his medicines to physicians in various parts of the country and tells them how to use it. If suits are accumulating against the principal for injuries caused by machine treatment with powerful poisons, if instituted against his agents, what jury would accept from a physician who is expected to know the character, strength and range of every medicine he uses, the plea: "I don't know what I gave, but it was something one Dr. Keeley said would cure."

When then is the best treatment for drunkenness? Give any physician, who has made the action of alcoholics a special study, a quarter section of land, with suitable buildings and absolute control, and let him treat each patient according to his idiosyncracy and pathological conditions and he will save a large proportion of those who are going down to hopeless drunkenness. He will prescribe such treatment as will create a distaste for alcoholics, allay irritability and give tone to the nervous system. He will remove from the organism as rapidly as practicable, by massage, Turkish baths, sudorifics, diuretics and cologogues all devitalized matter, at the same time improving the appetite and digestion, and supplying an abundance of nutritious food, treating, *secundum artem*, the various organic lesions incident to drunkenness, meanwhile making every surrounding attractive and healthful, taking advantage of educational methods and Christian influences, and pursuing such a course, and adopting such methods, as will secure the self-respect of every patient, the confidence of every intelligent and honorable physician, and of all religious and philanthropic organizations. Every act at such an institute must be characterized by honesty and plain dealing, clarified by truth, "the wisdom, strength, beauty, power and majesty of all ages." Such an institution, so conducted, will give ample scope to intelligent philanthropy and bring hope, joy and salvation to thousands of hearts and homes and the blessing of God on rational methods.

THE only objection to a self-made man is that in many cases he has failed to put himself together so as to work noiselessly.—*Kansas Medical Journal.*

SUPPURATING CYST DEVELOPED FROM ADHERENT OVARIES, AFTER REPEATED ATTACKS OF INFLAMMATION. SECONDARY OPERATION FOR THE REMOVAL OF INTRA-LIGAMENTOUS CYSTS.

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In presenting this paper I have selected three cases from my work of the past few months, which illustrate some interesting points, and teach a very valuable lesson, which, in the judgment of the writer, cannot be too forcibly emphasized by men engaged in abdominal and pelvic surgery. I report the cases as illustrating three as difficult abdominal operations as it has ever been my misfortune to have seen. While it is not a pleasant task for an operator to report the cases which have not recovered, it is my practice to do so, for it almost always occurs that from the careful study of these unfortunate results much valuable information is gained, and I am quite certain that we shall not be disappointed in the present instance in that particular. Even though the task be an unpleasant one it is one which every operator should do as promptly and carefully as he reports his successful cases, yet I am in a position to say it is not always done.

Case 1.—Mrs. W., aged 33, Troy, Ohio. Mother of one child nine years old. One year after the birth of her child the patient had an attack of pelvic inflammation from which she never fully recovered, yet she was able to move about the house after a few weeks. For a period of four years just preceding the operation she was so ill that she required constant treatment. The last two years she suffered constant pain, and for four months before the operation she was confined to the bed. She, being the wife of a physician, received attentive care during all of this time. The treatment gave temporary relief only, and after each recurring attack the patient was conscious of the fact that she did not regain her health to the same degree which she had previously enjoyed. As she expressed it to me she was slowly but surely reduced to a chronic invalid. The question of an operation had been often discussed by the patient and her husband, and as often discarded. It was only after the discovery of the tumor that the patient or her husband would be convinced that an operation must be made if they hoped to effect a cure or avert a speedy death. When I was asked to see the patient in January, 1891, I found that she had a tumor about the size of a child's head at birth, and had been suffering for weeks from an attack of peritonitis and sepsis. She was in such a miserable condition then, from long suffering and the effects of morphine, having daily a high temperature that I advised a short delay, with the hope that we might put her in a better condition for an operation. The morphine was taken away and phenacetine substituted, and the patient urged to take as much liquid food as possible. She improved to some extent, and after six weeks was moved to my "Home" for the operation, which was made February 28, 1891, and the specimens here presented removed, with the greatest possible difficulty. You will observe shreds of adhesions attached to every portion of the cyst wall, also the exceedingly thin wall of a part of the cyst. The contents was pus, and much of it was spilled inside, before the cyst could be enucleated. The patient had a slow recovery, but was able to go home in five weeks and is now in good health.

Case 2.—Mrs. S., Mt. Auburn, Cincinnati, aged 39 years; mother of three children, the youngest nine years old. She was conscious of the fact that she had some pelvic trouble after the birth of her last child. When it was fifteen months old she first sought relief on account of pelvic pain. Soon after the physician began to make local applications, the patient had an attack of peritonitis, which confined her to the bed for several weeks. Three weeks of that time the whole abdomen was covered with flax seed meal poultices as hot as the patient could stand. They were changed every one and one-half hours, so they could be kept constantly hot. After the patient was so she could move about from that attack, she had local treatment for twelve or eighteen months regularly until she revolted. Then that was for a time suspended. For the following two years she was more or less under the care of her physician, always "conscious of a tender lump in the right side" of the pelvis. In April, 1887, the patient again had an attack of peritonitis which confined her to the room twelve weeks. Nine weeks of the time she could not leave her bed. The first three weeks of that time she was again poulticed as before. After that date she suffered constant pelvic pain, which could only be relieved—not cured, by her attentive physician. The enlargement "or tumor" was discovered some time before the operation. It was variously diagnosed by different physicians. Early in July, 1890, a well known physician of Cincinnati thought electricity would be just the thing for a growth of that kind, with such a history as this patient had, and so applied it; but unfortunately for the patient, it did just what every man engaged in this work knows it will do—it set an attack of peritonitis which nearly cost the patient her life. Another well known physician saw the case with the attending physician with reference to an operation some weeks before the operation was made, which was after the patient had been treated by electricity, and many months after the tumor had been discovered; yet he could see no reason why an operation should be advised or made, and so expressed himself, notwithstanding the facts that the patient was a confirmed and suffering invalid, confined to the bed for weeks at a time with peritonitis from the most trivial causes, and a well defined tumor in the pelvis and abdomen. The patient came under my observation in April, 1891, after she had been suffering for weeks with peritonitis and sepsis. The pelvis was filled by a tumor which extended into the right side of the abdomen. The tumor was somewhat larger than a cocoanut. The operation was made April 27, 1891. There were dense adhesions to intestines, omentum and pelvic floor. Every portion of the cyst was adherent, except a space of two square inches upon the upper surface. One who has not had experience in removing ovarian cysts which have developed from an ovary bound down by adhesions where the patient has suffered for many years from repeated attacks of peritonitis, can not quite appreciate the difficulties to be overcome in such cases. You will observe by this specimen that every portion of the cyst wall, except the little space in front, is covered by ragged shreds illustrating the adhesions. The tumor contained pus. The patient rallied better than any one could expect—but died the fourth day from the preëxisting sepsis, which had existed for weeks before the operation.

REMARKS.

Both of the preceding patients had been sufferers for years, both had suppurating cysts developed from adherent ovaries of long standing; both had chronic sepsis at the time of operation. The facts to be derived from them are worthy of careful consideration by every physician in the land. I have thus gone into details more than I otherwise would, had it not been that I wanted the expression of the Fellows of this Association upon non-interference in such cases. The first fact to be derived from these cases is, that when a woman is rendered an invalid from repeated attacks of pelvic inflammation, with adherent ovaries and tubes which are evidently the cause of the attacks, thus threatening life and rendering existence a burden, they should be advised to submit to an operation for the removal of the diseased organs. That advice should be given as early as it is evident that nothing but an operation can bring the hoped for relief; and not defer it until the last resort, as it was in these cases. Particularly is this true of the last case, who was known to have a tumor in the abdomen for many months. In my judgment, the physician who does not thus advise his patient is more than negligent of his duty. If the operation had been made years before, in both cases the patients would have been saved untold suffering; and who could say that both patients would not have recovered. I cannot understand why any one who is himself an operator could not see the necessity for an operation in the last named case, with the history of the case to guide him, and a well-defined tumor in the abdomen.

Case 3.—The third case, Mrs. D., aged 39, of Cincinnati, is one of more than ordinary interest, from the fact that the case was one of double intra-ligamentous cyst. Twenty months before the operation, the patient had been subjected to an abdominal section by a physician, who found an intra-ligamentous cyst on the right side, which he stitched to the abdominal wall after it had been tapped. After five months of pus and sepsis the external wound closed, but after a few months opened through the vagina, and discharged pus ever afterwards. The operation did not relieve the patient of pain, and after the operation she had a number of attacks of peritonitis, which confined her to her bed for months at a time. When she came under my observation, early in July, 1891, she was convalescing from an attack of peritonitis which commenced early in March, and was yet unable to leave the bed. There was a ventral hernia at the old scar, and a tumor about the size of a cocoanut in the pelvis and abdomen. She had constant pain, and frequent, almost daily, attacks of pain, lasting for hours, which could only be made tolerable by large doses of opium. The patient was a hopeless and suffering invalid unless she could be relieved by an operation. Her suffering surpassed anything I have ever witnessed, except in the last stages of malignant disease of the uterus. The patient and friends were anxious for any operation which promised relief, and thoroughly understood that the operation promised the last and only chance of relief. I was not anxious to operate after the abdomen had once been opened and a cyst stitched to the abdominal wall, which had been followed by months of suppuration and sepsis. I knew we would have the old cyst wall "pus sac," which was left after the first operation, to dissect from the broad ligament, as well as firm and extensive intestinal adhesions of twenty months' duration to deal with, and possibly a second intra-ligamentous cyst upon the opposite side, yet as a matter of duty I could not decline to operate and do that duty. If we encountered all of these conditions, the case would be a desperate one at best. After all of the facts had been plainly stated to the patient and friends, they decided to take the chance which an operation promised rather than suffer longer. The operation was made August 31, 1891, in the presence of Drs. Drake, Reed and Ricketts, with Drs. Johnston and Colter assisting. The abdomen was opened above the old scar. It was found that there was an extensive intestinal adhesion to the abdominal wall and the old cyst wall. The incision was now enlarged towards the pubis to the left of the median line, so as to avoid the intestines. After an hour's tedious dissection, for the adhesions were so firm that they could only be separated by the knife and scissors, the intestine was liberated so as to give working room. It was found that there was an intra-ligamentous cyst on the left side, the size of a cocoanut, which was completely dug, as it were, out of the broad ligament, after which the one that had been stitched to the abdominal wall was dissected out of its broad ligament. I here present both cysts. You can see that they were completely enucleated. There were extensive intestinal adhesions in the pelvis, but no attempt was made to liberate them. The hernial sac was cut away, a glass drainage tube placed, and the cavity closed. The patient rallied well from the shock, but died from intestinal obstruction on the fourth day. There was no leakage from the intestine into the abdominal cavity, as demonstrated from the drainage tube, which remained in until near the time of her death. In reviewing this case, I am certain that it would have been vastly better for the patient if the operation had been completed and the cyst removed at the first attempt. I believe that no operator is justified in leaving an abdominal operation incomplete except in malignant disease, for the reason that all other growths can be removed, and it should be done when once attempted. I am confident that the intestinal adhesions from the former operation had much to do in causing the fatal result. While I much regret the fatal termination, I feel that I did right in operating, and would again do so under similar circumstances.

So long as the general practitioner persists in pursuing what he pleases to call conservative treatment in these cases, and keep the patients under his care just as long as he can keep breath in them, and surgeons of the older class turn these patients from their consulting room as non-operative cases, and thus defer it, or the case is made still more complicated from incompleted operations, we shall continue to see just such desperate cases; and the men engaged in this special work must act as surgical missionaries, and have such neglected cases as the foregoing come to them for operation. While this state of affairs exists, what can we hope for other than a high mortality in these delayed cases—and who should be held responsible for the deaths?

A PROPOSED AMERICAN MEDICAL BENEVOLENT FUND.

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Brief reference may be made to associations already in existence in the United States and in Great Britain, whose aim is to afford immediate pecuniary relief to distressed, qualified members of the medical profession, their widows and orphans, and to grant annuities to such after they have attained 60 years of age.

First, "British Medical Benevolent Fund," President, Sir James Paget, Bart., F.R.S., was established in 1836. According to the late report furnished the writer by the courtesy of W. H. Broadbent, M.D., who is connected officially with the British Medical Benevolent Fund, a feature of this Fund is that the whole of the money subscribed is available for the objects of the charity, "£3,531 in 1891 was distributed in grants or annuities in the relief of cases of distress, many of them of utter destitution, and the relief given is not unfrequently all that stands between the recipient and the humiliation of accepting parochial relief," the end sought being to enable the recipient to make a fresh start in life, or assist in completing education of children who will later on contribute to the support of their parents. Dr. Broadbent, F.R.C.P., the Treasurer, states that subscriptions and donations, 1891, were £1,763, and the number of annuitants 99. Bankers, Bank of England, Western Branch. Solicitors, Messrs. Gedge, 1 Old Palace Yard; and Collector, I. G. MacAlister, Esq., 20 Hanover Square, London. In a late report of the committee of this Fund, it is stated, "Applications have come from medical men, widows lately bereaved, and cast upon the world after a life of comparative ease and competence, penniless and without resource. These, by timely aid, have been enabled to tide over the first few anxious months, and have thus had time given them to look around and find means for the support of themselves and families. Children of medical men have been given a helping hand, and fitted to maintain themselves. The sick and aged medical men, and those, too, who have found themselves in difficulty and distress, have had relief from this Fund. There is no expenditure in salaries; a small sum is paid to the Collector for postage and stationery. Annuitants receive £20 or £26 during the year, the total number, 4,327, at a cost of £43,499. The patrons of this Fund are very numerous: Her Majesty Queen Victoria; the British Medical Association through its various Branches; the Worshipful Company of Drapers; the Worshipful Society of Apothecaries; the Faculty of Physicians and Surgeons of Glasgow; the Worshipful Company of Salters; 'an old Patient;' I. H. Galton, M.D.; Sir James Paget and others; Alfred Rothschild, Esq.; 'thank-offering' by Sir J. Paget, 1872, with scores of other names, might be also enumerated as noble contributors to the Fund which annually has mitigated the rigors of old age and poverty, and made widows and orphans to rejoice. The donations have not been less than £10. One bequest was £12,300, and another, Miss A. E. Ling, £1,000. Six medical men receive annuities of £26, or 10s. a week. Grants ranging from £5 to £20 have been voted to applicants." The reader of the above extract from the report of this single Medical Benevolent Fund, will perceive that our English medical brethren furnish to us in America a noble example.

The first organization of the kind in America was undertaken by the Boston Medical Book Club in 1856 "for the relief of destitute physicians or their families." Afterwards, in 1857, certain physicians in Boston formed an association for the above purpose under the name of the *Massachusetts Medical Benevolent Association*. On May 8, 1871, the Massachusetts Medical Benevolent Society was formed and incorporated. G. C. Shattuck, M.D., Drs. Lyman, Francis Minot, Buckminster, Brown and other physicians, are mentioned as prominent members, the purpose being to afford pecuniary assistance to members of the medical profession, their widows and children. At first the property owned by the Society was $10,000. Six beneficiaries received an annuity of $50 in 1872. In 1875 there were enrolled 179 members. In 1887 there were 196. In 1891, 186 members. Legacies received amounted to $11,045.59. Its benefactor's fund $4,350. The president for 1890–91 is H. W. Williams, M.D., and treasurer, Francis Minot, M.D. The report of this admirable Society concludes with the statement that the money distributed to beneficiaries since its organization, amounts to $9,340.

Shortly after the late civil war, during which, it may be added, the work of the U. S. Christian and Sanitary Commissions contributed greatly to lessen the horrors of warfare, and to provide for suffering humanity, prominent physicians and surgeons, among whom may be mentioned the names of N. S. Davis, M.D., and that of the late S. W. Gross, M.D., highly commended the plan for the formation of an American Mutual Medical Aid Association. Subsequently to the civil war in this country the first organization was the Mutual Benefit Association of Kentucky, the president, Dr. Keller, of Louisville, Kentucky; the admission fee of $10, and the payment of an annual fee of $2, secures to the family of a deceased member of this Society $2,500, or to one sick $5 per week for serious illness or accident. The membership is upward of 2,000.

In 1875 was organized the New York Physicians Mutual Aid Association with a membership of over 350, and a permanent fund of $6,254, which has increased by donations from the wealthy and generous citizens of New York. Dr. Mark Blumenthal, a late president, says in his report "this Association has distributed, since its organization, more than twenty thousand dollars, and the amount of comfort conferred, and grief and sorrow assuaged by this sum, no figures or words can adequately express." His successor, Dr. Gouveneur M. Smith, in his late report of the work of the Association states: "It has now a financial capital of $172,000; its largest contributors and most earnest supporters are bachelors of the medical profession." He especially emphasizes that "a *charitable* element should always prevail in the direction of such fraternities, and that the affluent members of the profession should decree it a duty to their holy calling to foster any such organization."

In 1878 was formed the Mutual Aid Association of the Philadelphia County Medical Society, "which has, by the steady growth of their fund from gifts and legacies, as well as from annual dues, contributed to save the families of many of their deceased members from penury and distress." The late Henry H. Smith, M.D., Benjamin Lee, M.D., and other prominent physicians from Philadelphia were founders of this Association, which Dr. Benjamin Lee, a late president, says, "Seeks to remove the reproach from the profession, that they alone of all callings and crafts made no systematic provision for the relief of brethren in distress, or of their destitute widows and orphans, unprovided for and left dependent on the cold charities of the world." This Society affords, also, aid to such members as from long continued illness, or accident, may be compelled to seek such aid. The permanent fund of $3,525 is invested and deposited with Guarantee Trust and Safe Deposit Company, of Philadelphia, either in Bonds of the United States of the State of Pennsylvania. In May, 1891, the permanent fund of this Association in Pennsylvania 5's and City 6's, and deposited in the Association's safe of the above Trust Company, 316 Chestnut street, Philadelphia, amounted to $6,168.75.

The Mutual Aid Association, of the State Medical Society of Virginia, requires each member of the Association to pay to the treasurer an initiation fee of $1.00, and to be assessed $1.00, $1.30 or $1.50 according to age, on the occasion of the death of a member; the funds to be disbursed by the treasurer and paid over without delay to the family of the deceased physician. The report made by a committee of this Association, recommended for the selection for officers, the best and most benevolent men, whose duties shall be to make an annual report of the proceedings, the amounts of money collected and expended and to raise funds to be applied for the relief of the destitute families of deceased brethren, who in some instances are no exceptions to the accidents, the financial distress and even of misfortunes growing out of the immoralities of human life, leaving not infrequently at death their families without support or resources of education.

These Societies hold annual meetings, either during the Spring or Autumn months. They require the applicant for aid to give name, date of graduation, college, means of support and cause of pecuniary distress and a certificate signed by two physicians. Among prominent physicians in the United States and in Europe, who have given their support and money towards the creation and endowment of a Medical Benevolent Fund may be mentioned, the President-Elect of the American Medical Association, Henry O. Marcy, M. D., who has declared "the object an excellent one." His predecessors, the late Professor S. W. Gross, Austin Hunt, Sr., M. D., and John Hodgkin, M. D., also Professors N. S. Davis, Sr., M. D., and Lewis Sayre. M. D., and Dr. P. O. Hooper, Little Rock, Ark., and Dr. William T. Briggs all have unanimously and officially endorsed the measure and have affirmed that "such a plan and object to aid disabled physicians and their families deserves the favorable consideration and support of every member of the medical profession."

Abroad, Sir James Paget and other eminent men have given their influence to promote such benevolent ends: Ireland has a Medical Benevolent Fund; the Lancet Relief fund is a private benefaction by the proprietors of the Lancet. The British Medical Association with its 16,000 membership, with branches in almost every county in England has its Mutual Insurance against sickness, reports of which appear annually in the British Medical Journal. The Royal Medical Benevolent College has its Medical Sickness Annuity and Hope Assurance Society, and kindred societies exist on the Continent in Paris, Berlin and in other centres of Europe.

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY H. GRADLE, M.D.

LECTURE IV.

One of the conditions determining the occurrence of certain infections is the act of "taking cold." The dread of this event has such a hold on public belief, that it is difficult to sift the truth out of the immense array of alleged instances in which patients attribute diseases to "cold." Chilling of the body is such a common occurrence, and is followed by disease in but so small a proportion of cases, that we can infer a causal relation to the subsequent malady only when we can obtain, with some regularity and precision, the history of cooling of the surface preceding a given form of disease in numerous instances, and within a definite period of time. This is the case in acute nasal catarrh. On the basis of its pathology and clinical history, we must regard acute suppurative rhinitis as an infection, although the virus has not yet been identified. Now, how can "taking cold" bring about this infection?

In all clinical instances of suppuration, the pus contains the parasites. As nasal catarrh is a very common trouble, and is attended by copious secretion of pus, we have all reason to suspect the wide dissemination of the microbe causing it. There is hence frequent opportunity for these germs to reach the nasal cavity. But it is more than doubtful whether the deposition of these germs on the mucous membrane is sufficient for its invasion. For in that case there would be more evidence of contagiousness, which could scarcely be overlooked in a disease of such frequency, such short time of incubation and such marked onset as acute catarrh. We must infer that the occurrence of infection is determined by certain conditions, as to the nature of which the following is about the extent of our present knowledge:

There exists, in and underneath the nasal mucous membrane, a dense plexus of veins, the capacity and turgescence of which vary within rather wide limits in the normal state. This vascular network is more or less diffused, but is massed into distinct cavernous cushions at the anterior and posterior ends of the inferior turbinated bone. The normal individual is not conscious of the variable congestion of this plexus. But if one side of the nose is narrowed by thickening or deflection of the septum, or if the cavernous body has become hypertrophied in consequence of frequent attacks of catarrh, the individual can feel a sudden turgescence of the nasal lining whenever a part of the body is chilled. The cooling off of a cutaneous area, for instance, by a draught on the shoulders, causes, through reflex influences, relaxation of the nasal blood-vessels. Most of the time this is a transitory occurrence, without other consequences. In some instances, however, it is followed by acute nasal catarrh within twelve to eighteen hours. In what manner this reflex congestion of the nasal blood-vessels favors the invasion of the mucous membrane by parasites accidentally on its surface, we do not know; but that it does, is a matter of clinical observation.

Another precise instance of the influence of "cold" is acute inflammation of the middle ear as the result of *diving*. Cold water in the meatus gives most persons a disagreeable feeling of fulness, which may disappear in some hours, or may increase until inflammatory symptoms set in. It is evidently due to vascular disturbances extending down into the Eustachian tube. As the naso-pharynx and, according to De Rossi, even the Eustachian tubes, may harbor germs on their surfaces, particularly so in the so frequent chronic inflammation of the naso-pharynx, the *congestion resulting from the chilling of the meatus* evidently favors the infection by the disease germs present.

It is doubtful whether there are any other well authenticated instances of acute infections of mucous membranes resulting from chilling of the surface. But it can be often observed clinically that the continuous cooling of the feet or some other limited area of the skin, or the sudden chilling of the warm surface, lights up again a preëxisting inflammation of mucous membrane which had begun to subside. This transformation of a mild subacute or chronic condition into an acute attack can be witnessed in catarrh of the nose, ears, bronchial tubes, and especially the intestines. *Probably this occurrence more than any other forms the basis of the popular belief in "colds."*

Exposure to cold is an etiological factor also in rheumatic affections. In the variety known as "muscular rheumatism," chilling of the surface is most commonly stated as the event leading to the trouble. We neither know at present whether muscular rheumatism depends on infection, nor in what way "cold" may bring about the inflammatory exudation. In articular rheumatism, which we cannot logically consider anything but an infection, observation teaches that exposure to cold does play an important determining rôle, but how, is at present guesswork.

Whether the hygienic surroundings and habits of man influence his liability to acute infections, is an open question. But that the ability to check the extension of chronic infections varies with the state of physiological vigor, is a much more certain observation—particularly so in tuberculosis, perhaps also in syphilis. Very instructive in this respect is an experiment of Trudeau,[1] in which five rabbits were inoculated with tubercle bacilli and then set at liberty upon an island, thus giving them the fresh air and exercise which the ordinary victims in the laboratory lack. While tubercular infection is nearly infallibly successful in rabbits in captivity, of these five wild animals, four escaped without lesions of any kind. A clinical observation of similarly striking nature refers to the liability of infants to summer diarrhœa under bad hygienic circumstances, as contrasted with their relative immunity when leading an outdoor life.

The *state of nutrition* is popularly supposed to determine the susceptibility to various infections. Clinical evidence, however, confirms this view only to a limited extent. Typhus and relapsing fever are known to spread especially during periods of famine and amongst underfed people. Canalis and Morpurgo[2] have investigated experimentally the influence of starvation on the relative immunity which pigeons, chickens and rats present to anthrax infection. In the case of birds they found that the susceptibility to the disease was increased by the deprivation of food, so that they could be infected with certainty, while of the normal animals only a small proportion succumb. In rats, however, the results were negative. Proper nutrition is also recognized as an important factor in the resistance of the body against tubercular infection. While it is questionable whether the first local effect of tubercular inoculation is at all influenced by the state of nutrition, it is certain that *in the underfed body the infection* is more apt to spread than in a well nourished system. Another disease, in all probability of infectious origin, but *determined by the diet*, *is* scurvy. *Here the* absence of fresh vegetables is the condition upon which the occurrence of the infection depends.

Improper diet, poorly prepared food and especially insufficient mastication of the food, are largely responsible for the disturbances in dyspepsia, and catarrh of the stomach and intestines. While we yet lack positive demonstration, there can scarcely be any doubt but that these diseases are due to bacterial influences, if not invasion of the mucous membrane, at least abnormal fermentations. That these conditions are maintained by errors in diet, or faults in eating, which fill the intestinal tract with material difficult of digestion, and hence, irritating, is clearly demonstrated by clinical and therapeutic experience.

Certain infections are favored by preëxisting anomalies of nutrition. A striking instance of this is the predisposition of diabetic patients to tuberculosis and suppurative processes, such as phlegmons and furuncles. An experimental explanation of this predisposition was found by Bujwid[3] in the fact that the injection of glucose with staphylococcus cultures diminishes the resisting power of the tissues to these parasites. The resistance of the organism against some infections, particularly pneumonia, is also lessened by the abuse of alcohol and the nutritive disturbances incident to other degenerations of the nervous system, like general paresis.

The possibility of infection is increased in some instances by the simultaneous influences of different microbes. Experimental proof of this occurrence was obtained by Roger. Rabbits are naturally immune against malignant œdema (at least some races of rabbits). But, if this bacillus is inoculated together with the bacillus prodigiosus—the latter by itself a non-pathogenic microbe—the animal succumbs to the infection. The same animal cannot contract symptomatic charbon by inoculation with the pure culture, but gets that disease when infected with a mixture of the bacillus of symptomatic charbon with the bacillus prodigiosus, the proteus bacillus or the yellow staphylococcus. Virulent secretions, though they contain originally a pure culture of some parasite, can easily catch other germs from the air or by contact, and by the time they dry on the surface of objects or become suspended in the air as dust, they yield thus material for mixed infections. Bacteriological analysis shows that pus from abscesses, or from pleurisy or suppurative otitis, contains very often more than one variety of parasites. Mixed infections are therefore an actual, and not very rare, occurrence. While the course of suppuration of mixed origin is not different from those due to a single variety of microbes, it is probable that the accidental entrance into the system of associated parasites may lead to disease, where one foe, unaided by others, might have been resisted.

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[1] American Journal of the Medical Sciences, July, 1887.

[2] Fortschritte der Medizin, 1890, No. 18 and 19.

[3] Centralblatt f. Bakteriologie, Bd, IV, s. 577, confirmed by Karlinski idem.

Of even greater clinical importance than the simultaneous association is the succession of different parasites in the instances known also as mixed infections, but perhaps more properly termed secondary infections. This is exemplified by diphtheria. The disease by itself is due to the characteristic bacillus always found in the deeper layers of the pseudo-membrane of true diphtheria. In the majority of patients, however, a streptococcus, apparently the well-known streptococcus pyogenes, invades the diseased membrane after a few days, and may persist there even after the diphtheria-bacillus has been eliminated, or it may spread along the lymphatics and reach internal organs. Diphtheria as seen clinically is thus often a succession of two different infections, each with danger peculiar to it. Similarly, autopsies often show in typhoid fever streptococci or staphylococci in the intestinal lesions or even in foci in other organs. Septicæmic complication dependent on the familiar pus cocci occurs likewise in variola and scarlet fever. The frequent occurrence of such secondary infections and bacterial associations has been particularly described by Babes.[4]

The possibility of secondary infections depends on several factors. In the first place the invasion of mucous membranes by the primary parasites does away with the protection which intact surfaces give the body against certain infections. Thus in case of the pharynx, the staphylococci and streptococci often present in the mouth can enter the diphtheritic patch, while the same cocci or the bacillus coli commune can likewise invade intestinal lesions caused by other influences. In pulmonary consumption, too, we find the bacillus tuberculosis aided in breaking down the tissue by various bacteria which have found an open entrance through the diseased pulmonary surface.

In the second place, however, it seems that the organism damaged by the poisons of one variety of parasites cannot struggle successfully with another invader which it could resist in its normal state. The first case of mixed infection ever recorded was of this nature. The bacillus of malignant œdema is so widely distributed, that the rarity of the disease in man evidently means that the human race is practically immune against it. Nevertheless, Brieger and Ehrlich saw this infection complicating typhoid fever in consequence of hypodermic injection of a tincture of musk contaminated with this microbe.

As secondary infections we must also class the occurrences which clinicists have hitherto called complications, such as pneumonia during or after typhoid fever or measles, endocarditis during rheumatism and similar instances.

Another important aspect of infectious diseases is the spreading of infection from one locality to another. While the propagated nature of disease of this kind cannot escape attention, whenever the primary infection is observed as it creeps along, there are cases in which the primary disease occasions but little annoyance, or where the extended disease follows the original trouble only after some length of time, and in these cases the source of the infection may be overlooked. Instances of such *infection by extension* are the involvment of the maxillary sinus in consequence of nasal (or dental) disease, the extension of catarrh from the nose to the ear, the propagation of infection from the ethmoid cells to the contents of the cranial cavity. Again, phlebitis of the transverse sinus and meningitis from suppuration of the middle ear furnish examples of this occurrence as well as the extension of inflammation from the urethra into the seminal ducts and epidydimis. Very important also is the extension of gonorrhœa into the Fallopian tubes. In these different instances the virus causing the later disease is not necessarily identical with the microbes of the original focus. For in the case of mucous surfaces there is all opportunity for bacterial associations, and parasites which may have only secondarily settled in the locality first diseased, may gain the ascendency in the tissues subsequently involved. The dissemination of the primary virus or of some secondary parasites superceding it can depend on anatomical peculiarities, favoring the extension or interference with the resisting power of the adjoining tissues due to venous stasis or collateral œdema. Probably slight traumatism, vascular disturbances, the result of chilling and mechanical influences carrying along the virus, may also play a rôle.

An instance of infection by extension of peculiar nature is the spreading of sympathetic inflammation from one eye to its fellow. Here the path of the virus is along the sheaths of the optic nerve to the chiasm and down along the other nerve to the second eye. In view of failure on the part of some observers in finding microbes along this tract in some instances, the query suggests itself whether sympathetic ophthalmia is not occasionally due to the transport of toxalbumins, and not of living parasites.

Infection by extension does not always follow continuity of surface. A frequent observation is the occurrence of nasal or pharyngeal inflammation followed in the course of some days by bronchitis, while the larynx remains healthy. Some patients give this history in many successive attacks. What path the virus pursues here is not certain.

A special variety of infection by extension is the transportation of virus from one part of the body to another through the blood vessels. This is best exemplified in pyæmia. In this disease pus-generating microbes developing in some part of the body, perhaps only in an insignificant spot, are carried away by the blood current and are ultimately deposited in internal organs forming foci of inflammation, which develop in time into metastatic abscesses. Pyæmia is not an etiological unity any more than suppurative inflammation, and can probably be caused by any microbes of sufficient pyogenic properties. It is not understood as yet what factors contribute to drive the parasites into the blood. From the distinctly epidemic character of pyæmia as seen in hospitals before the days of antisepsis, it is to be inferred that one of its conditions is a high degree of virulence of the parasites. Metastatic infections are seen, however, in other diseases as well as in pyæmia. Thus inflammation of the testicles in the course of mumps is an instance. Similarly we find occasionally a pneumonia complicated by meningitis due to the distribution of the pneumococcus through the circulation.

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d. Besides the primary affections due to physical, chemical or parasitic causes, we may group together various diseases which, according to our classification, may be considered as primary diseases, inasmuch as they do not depend on other preëxisting troubles.

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[4] Bacteriologische Untersuchungen ueber septische Processe des Kindesalters, 1889, and Cornil and Babes Transactions of the tenth Intern. Med. Congress. Pathology, p. 12.

Their cause, however, is not directly any occurrence in the outer world *but the impression made on the nervous system* by different events. If we wish to classify these diseases at all etiologically, we can call them the result of influences which derange the mechanism of the nervous system by inducing excessive action in some part of it. As a type of this group, may be mentioned surgical shock. The mechanical violence leading to it is the cause of the shock only, inasmuch as it makes a specific impression upon the nervous system. Another example of this etiological group is rail-way spine, or the traumatic neurosis resulting from some physical accident associated with a deep emotional impression. Mental influences, such as terror, have been known to cause chorea, while excessive worry must be considered a sufficient cause of certain transient forms of insanity.

In this provisional etiological group, we may also include nervous disturbances, resulting from overwork, such as writer's palsy and the various forms of professional cramps. In all these instances the nervous system can be thrown out of gear all the easier if there exists a "neuropathic tendency," a condition which will be further described under reflex-neuroses.

* * * * *

II. Secondary Diseases.—A large number of ailments are not at all the result of causes originating outside of the body, but are the consequence of some preexisting disease, lesion or anomaly in the system. The etiology of these secondary diseases must therefore be studied from a point of view different from that in primary diseases; it must be based on physiological and pathological investigations, irrespective of the outer world. But we must not overlook that the distinction between primary and secondary diseases is an etiological one only. The same lesion may, indeed, be produced in more ways than one. Thus a neuritis is a primary disease, if due to some poison taken into the body, but is a secondary affection if caused by toxic substances formed as the result of disease, in another part of the system. The pathological changes may be the same in the two cases but the prognosis is different according to the cause.

In the study of secondary diseases we must avoid unnecessary digressions, by distinguishing clearly between secondary diseases and mere symptoms. All the morbid phenomena which depend directly upon, and are the immediate consequences of any existing disease or anomaly are symptoms. Any train of morbid disturbances, however, which is but indirectly induced by some other ailment, can be considered a secondary disease. True symptoms must be present in every case of a given disease at a given stage, but secondary affections occur only when the primary disturbance which leads to them, happens to be associated with the proper anatomical or pathological conditions. Symptoms disappear as soon as the disease is over, but secondary maladies may continue after the ailment which started them has been removed. This distinction may be illustrated by the results of the pressure of a tumor upon a nerve. The pain and the transient impairment of function thus produced are symptoms of a tumor in that locality, but the atroppy of the nerve which may set in is a secondary disease. Again, thrombi on the cardiac valves cause symptoms in the form of certain circulatory disturbances, but the detachment of such a clot and its arrest in an artery of the brain is a secondary affection. There are instances, however, in which a sharp line cannot be established between symptoms and secondary diseases.

In attempting a review of secondary diseases from an etiological standpoint, the mere enumeration of the various lesions, which may give rise to them, would be of little service. But we can get a convenient classification of the subject *based on the manner in which the secondary diseases are induced.* We can thus recognize secondary affection produced

(*a.*) In a mechanical way.
(*b.*) Through influence on the nervous system.
(*c.*) In a chemical manner, and
(*d.*) As the result of nutritive disturbances.

AN INCARCERATED HERNIA RELIEVED ON THE FIFTH DAY BY LOCAL APPLICATIONS OF ETHER. POSITION, AND MANIPULATION.

BY C. M. FENN, M. D.,
OF SAN DIEGO, CALIFORNIA.

Some time ago a middle-aged sporting man, with the following history, came to the County Hospital, three miles from the city, and then under my service.

Five days previously he clandestinely occupied a bed in one of our hotels, hoping to speedily reduce a chronic inguinal hernia. Failing in this a physician was summoned who, meeting with no better success, gave him an anodyne and left him for the night. On the following day a consultation was held which was interrupted by the landlady ordering the trio out of the house! During the next forty-eight hours, at his new quarters, four doctors were in frequent attendance, and finally decided that operative interference was imperative.

At our interview, on the fifth morning, I learned that stercoraceous vomiting and anenexia had been present, with other symptoms, yet he had survived the jaunt of three miles, and after a good night's rest, was in a fine condition.

As I was en route to visit a pressing case, frequent applications of ether were ordered, meanwhile, as at least a good preparatory treatment. He was also placed in a position for taxis which I believe to be in a measure my own, as well as a most helpful one in such cases. The hips were elevated upon the back of an inverted chair, to an angle of about forty-five degrees with the abdomen. Feet with toes turned in hung over the highest or last round of the chair. In this position, differing somewhat from the descriptions of authors, gravity becomes a vis á fronte which efficiently supplements the vis á tergo, or manipulation of the surgeon, and is a ready metho for relaxing the muscles and fasciæ involved.

Upon my return, a stimulating enema was ordered which dispersed the intestinal flatus. After this and a brief attempt at taxis, I was pleased to see the intestine return to its proper receptacle. Convalescence was rapid and complete.

San Diego, California.

Lapari affirms that cold has a great influence in inducing pneumonia, because it disables the bronchial epithelium to such an extent as to readily admit the easy entrance of infectious material to the alveoli.—*American Lancet.*

SOCIETY PROCEEDINGS:

The Medical Society of the Missouri Valley.

Tri-Session of the Fourth Year held at Leavenworth, Kansas, March 17-18, 1892.

SECOND DAY—MORNING SESSION.

(Concluded from page 461.)

S. G. Gant, M. D., Kansas City, Mo., Rectal Surgeon to All Saints Hospital and Childrens Home, read a paper entitled:

PRURITUS ANI WITH REPORT OF CASES.

Mr. President and Gentlemen:—I have selected this subject from the fact that it is one of the most frequent rectal disorders that the physician, as well as the specialist, is called upon to treat; and, at the same time one of the most troublesome to cure. I would rather see a patient come into my office complaining of any other rectal disorder barring cancer than pruritus ani. If the patient had hæmorrhoids, fistulæ, ulcer or fissure, I could tell them with a degree of confidence that I could cure them within a reasonable length of time, but with this very intractable affection I have to shake my head and say that unless they will strictly, patiently and persistently follow my advice as long as I think necessary, I cannot cure them, but if they will do this I feel confident that they will eventually make a good recovery. Patients realizing that rectal diseases are unattractive and repugnant habitually manifest more than usual hesitation in applying for medical aid, as a result of this false delicacy the physician rarely sees a case of pruritus until the patient has in many instances suffered for years. The itching is almost unbearable in many cases, but it is worse at night after they get warm in bed. It is so annoying and the temporary relief obtained from scratching so great, that I have heard a patient remark that he would scratch if he knew he would be sent to the penitentiary the next moment. Pruritus ani is generally a symptom of some other disease, as hæmorrhoids, eczema, ulcer, fissure, pinworms, etcetera, but it is often present in a marked degree when no other cause for its existence can be discovered; in all probability a neurosis of the skin. It is a very annoying affection, dependent on no particular general state, being found in all classes of people from the millionaire to the pauper.

The itching is more or less constant and scratching is often indulged in unconsciously, during sleep, which aggravates the condition by lacerating the skin. In old cases there are many points of interest to be noted such as a change in the color of the skin, it being thickened and usually of a dullish white color, and sometimes having a parchment like appearance, or else eczematous and moist from exudations. At times instead of the moist condition, the skin around the anus will be found scaly. But the most characteristic change to be noticed is that the fissures are cracked, and are seen radiating from the folds of the anus to a greater or less degree. I have seen these cracks extend down the leg half way to the knees and up the under surface of the scrotum of the penis as far as the glands, and in one case the skin was very thick and felt like leather. In this connection I would like to say a few words about the ignorance often displayed by the laity and frequently by apparently successful practitioners of medicine, as regards rectal disorders, for many seem to think that there are only two diseased conditions habitable to the rectum, namely, *piles* and *fistulæ*. The very extensive case of pruritus just spoken of was referred to me to be treated for itching piles, and not long since I had a marked case of cancerous stricture of the rectum referred to me by a prominent physician; on the back of his card was this very expressive sentence, "I think the patient has the piles." Why this deplorable ignorance on the part of physicians who seem to be well posted in other departments of medicine? I will not say ignorance, for I candidly do not believe it is the result of that, but of gross carelessness on their part in not making a thorough examination. The patient goes to the physician with the remark, "Doctor, I have the piles"; perhaps he will gently drop down the pantlets, give a casual glance at the anus and perhaps observe a cutaneous tag or swelling and say "yes, you've got 'em again". The patient will say, "doctor, I have a fistula"; the doctor gives the same careless examination and perhaps observes a slight discharge coming from the rectum, and confirms the diagnosis of the patient without in either case introducing a speculum to see if the external conditions were not a result of a more serious internal disease as stricture, ulceration, or polypi. Gentlemen, the time has come when this sort of thing ought to stop, and we as progressive men and in a progressive age should look into the cases in a more careful and scientific manner, and not let our want of knowledge and carelessness drive these cases to the so-called advertising specialists —namely, *itinerant quacks* for treatment, many of whom never saw the inside of a legalized medical institution. But prepare ourselves so that we as regular and legalized practitioners of medicine, may gather in the shekels.

A word now in behalf of rectal specialists in the regular profession. If you should have occasion to send patients to them for treatment do not inform them before they go that they will certainly get cured, and that just so much time will be required, and that they need not be delayed from their daily vocation; for in my experience as a specialist in this department of medicine, I have found many patients and some physicians who seem to think that a specialist knows no such thing as failure, and that he ought to be able to tell them on the spot, just how many days, hours and minutes it will take after the operation before they will be entirely well.

Now, to continue the subject of the paper, I will say that it is not well to promise to cure a patient of pruritus in any given length of time, but if they choose to place themselves under your care for treatment, do the very best you can for them. In considering the treatment of pruritus, the first point to be gained is to ascertain the cause, remove it, and thereby cure the itching. It may be the result of a fistula with internal openings, thread worms, which when present can be seen in the radiated folds of the anus; it is sometimes accounted for by the presence of pediculi; again, pruritus of an intense kind may be due to eczema marginatum, the diagnosis of which depends on finding the spores of the plant, and it has been found as a symptom of chronic eczema herpes and of erythema; it is, however, more commonly a result of hæmorrhoids, polypi and ulceration. If, however, no local cause can be discovered, a constitutional one should be sought for and corrected. It is well to look after any errors in diet; anything like excess in tobacco or alcohol will aggravate the disease, and must be regulated if indulged in at all; interdict beer and spirits, and restrict the drinking to a small amount of light sherry or claret, and Vichy or seltzer water. I have seen many a case relapse after a prolonged spree. I remember one case in a gentleman who was in the habit of getting on periodical sprees (who unfortunately did not have the benefit of the Keeley treatment), whose pruritus returned with each spree. Coffee should be given up, and weak tea or cocoa substituted for breakfast. The various condiments used for flavoring food should also be discontinued. It is beneficial to enjoin a walk daily in the sunshine after a cold sponge bath in the morning, followed once a week by a hot or Turkish bath. Another thing which affords patients much relief is to bathe the anus and surrounding parts, just before retiring, with warm water and tar or Castile soap. The bowels should always be kept in a relaxed condition, for which there are many remedies to choose from, endeavoring to select one to suit the case under advisement. The following prescription comes from Allingham, and which he recommends very highly:

Magnesia sulph., ℈j.
Magnesia carb., grs. v.
Vini colchici, mv.
Syrup sennæ, ʒj.
Tr. cardam. comp., ʒss.
Ext. inf. chiratæ, ℥j.
M. *Sig.* Twice daily.

The mineral waters will be found useful in many cases for the same purpose.

In speaking of the medicinal treatment of pruritus, I will say that there are a great many prescriptions highly recommended for its local treatment, but I must confess that I know of no specific; but much relief from the itching can be obtained from the use of the different remedies. A *good lotion to apply after bathing the anus at night*, and one which affords much relief, is composed of:

Soda biboratis, ʒij.
Morphine hydrochlor., grs. xvii.
Acidi hydrocyanici dil., ℥ss.
Glycerinæ, ℥j.
Aqua ad q. s., ℥viij.
M. Sig. Use as lotion.

I have found the following glycerole to be both cooling and palliative. It is composed of:

Pulv. alum, ʒij.
Hydrarg. chlo. mite, ʒj.
Glycerine, ℥iij.
M. Sig. Paint the affected parts with it every night.

The yellow wash and chloroform ointment I have found serviceable. One of the best formulas for the relief of the itching that I have ever used comes from Dr. Bulkley, of New York, and is composed of:

Unguent picis, ʒiij.
Unguent bellad., ʒij.
Tr. aconite rad., ʒss.
Zinci oxidi, ʒj.
Unguent aqua ros., ʒiij.
M. Sig. Apply night and morning.

Where the itching seems to be of a nervous character arsenic is indicated. It may be combined with quinine and cod *liver oil if indicated and carried to its full physiological* effects. If pin-worms be the cause, an injection of lime water, infusion of quassia or one composed of carbolic acid ʒj, glycerine ʒj and ℥vij will usually destroy *them, the* infections being used after each passage.

I will not take up your further time by giving you numerous formulæ, but will say that those composed of carbolic acid, the metallic salts, menthol, quinine, and the various other astringents will be found valuable in the treatment of pruritus with the proper bases, making the prescription a little stronger or weaker as the case progresses. By their aid much relief can be given the patient. If, however, the itching is so annoying that the patient cannot sleep (which is often the case) do not prescribe morphine or an opiate, for they are always followed by an increase in the disorder, after their immediate effects have passed off. The bromides and chloral I have found preferable; in a few cases I have had patients obtain a fair night's rest after the use of the coal tar derivatives which are flooding the market just at present. If I have an unusally bad case where the above remedies fail to bring comfort and sleep, I resort to a very ingenious device which I have found to bring about the desired result. This little device is known as Allingham's bone plug which is shaped like the nipple of an infant's feeding bottle, the nipple should be an inch and a half in length with a circular shield to prevent it slipping into the bowel. It is supposed to prevent the itching by exercising pressure on the venus plexus and the terminal nerve filaments close to the anus. *I have found it to give immediate relief* in nearly every case, thus affording the patient a good night's sleep, and patients tell me that its retention causes them scarcely any annoyance. The surgical procedures resorted to in the treatment of pruritus are somewhat varied; the operation performed depends entirely upon the cause of the itching, and in order to bring before you the surgical procedures which I have resorted to and with fairly good success, I will report briefly the following cases.

Case 1.—Married lady, 30 years old, *in good circumstances*, family history good as well as her general health. She was referred to me by one of my associates to be treated for itching piles. After much trouble I succeeded in getting her to submit to an examination which revealed the following condition of things. There were many long scratch marks all around the anus and sides of vulva; the skin looked red and angry as a result of constant scratching, and was much thickened. By the aid of the speculum I discovered a very small fissure about one fourth of an inch in length on the posterior wall of the rectum about the junction of the internal with the external sphincter muscles, in the bottom of which I could see a small round lump of hard *fecal matter which no doubt was the immediate cause* which kept up the itching, that on the outside evidently being of a reflex nature.

Treatment.—Placed patient under chloroform, curetted the fissure with a fine curette and applied to the fissure a solution of silver nitrate, grains 20 to the ounce. painted the surface around the anus twice a week *with iodine, and the* fissure was painted over with balsam of Peru. This was kept up for three weeks at the end of which time the patient had entirely recovered and remained so for one year that I know of, at which time I lost sight of her.

Case 2.—Mr. O. C., Irishman, 50 years old, contractor, was addicted to all the ordinary, habits of life. Said he came to be treated for itching piles. Said that he had been troubled with them for fifteen years, ever since a traveling doctor removed a tape worm from him. On examination I found *him to have one of the worst* cases of pruritus *ani that* I have ever seen, the skin was torn and lacerated half way down to the knees, it was very thick and of a dullish white color with many cracks half an inch in length running transversely to the long diameter of the leg. I found the same condition around the anus and scrotum, and even extending along the under surface of the penis as far as the glands, some of the cracks being very deep. As he expressed it, "he suffered the torments of the damned," there being constant itching, but which became almost unbearable at night. He had gone the rounds and been treated by many physicians, and he used all the patent nostrums ever recommended for piles, but he had never had an examination made. I informed him that I could do nothing for him unless he submitted himself to an examination that I might ascertain the cause of the trouble. To this he finally consented, and by the aid of speculum I discovered a very large ulcer about the size of a quarter on the posterior wall of the rectum at the upper portion of the internal sphincter muscle. I judged that it had been there for a great length of time, perhaps for years from its color and thickened edges, and in *my mind* the outside trouble was caused from the unhealthy discharge from the ulcer.

Treatment.—The treatment consisted *in making an incision* through the center of the ulcer and carrying it sufficiently deep to divide the fibres of the internal sphincter, in this way securing partial rest. The ulcer was then *painted over* three times a week with balsam of Peru after an injection of warm water; for the itching on the outside I had the patient smear the parts over night and morning with a chloroform ointment. This treatment was kept up for a month, at the end of which time the patient was entirely well.

Case 3.—Lady, 28 years old, of very nervous temperament, being one of those individuals who thinks she has some trouble for which she needs an operation. The patient came to me complaining of itching about the anus, and informed me that she needed an operation. On careful examination I found nothing,paralyzed sphincters for luck, and *cured* my patient in a week.

Case 4.—Patient, male 40 years old, lamp lighter by occupation. His family physician referred him to me to be treated for itching piles and remarked, at the same time, that he had tried various remedies commonly used *in the* treatment of that trouble. On examination I found that the patient had an obstinate case of pruritus, but further examination with a speculum could not detect any internal trouble. I thought possibly that the itching might be due perhaps to some kind of germ chasing around in the skin, so I placed the patient under chloroform and resorted to a rather radical way of treating pruritus. I took my Paquelin cautery and blistered the diseased portion in good shape, recommended him to stand up for a week, treated the cauterized parts as I would a burn of any kind, and at the end of ten days the parts had entirely healed, and that was the last of his pruritus. This was 18 months ago.

Case 5.—Male, æt 40, a man of very nervous temperament, said that he had been troubled with the "itching" for over three years, and had tried numerous remedies for its relief. On examination I noticed a whitish discharge coming from the anus; on making a digital examination, I discovered a large growth some four inches in length, the largest diameter being about an inch and a half. This growth was attached to the posterior wall of the rectum by a pedicle about the size of my little finger. I advised an operation for its removal, and having obtained his consent, I proceeded to ligate the pedicle with strong silk, after which I removed the growth which proved to be a very large polypus; the pedicle being very vascular and there being some oozing, I deemed it advisable to cauterize the stump, after which there was no more hæmorrhage. The wound was dressed antiseptically, and the patient ordered to remain in the recumbent position. At the end of the fourth day the remaining portion of the pedicle sloughed off without any hæmorrhage. The itching on the outside was treated in the ordinary way, and at the end of two weeks all discharge from the rectum had ceased; the outside parts healed, and he had apparently recovered and said that he felt better than he had for years. That being one year ago, and the pruritus had not returned up to a few weeks since.

I could enumerate many cases of a similar nature, but which, though interesting to me, would not be to you since many of you perhaps do not see a very great number of these cases.

In summing up, I will say that the important point in the treatment is to ascertain the cause, and if you find that the pruritus is a result of some other rectal disorder requiring surgical procedure, it is best to operate at once and not wait months and, in many instances, years in making local applications for the immediate relief of the itching which have no curative properties in themselves until after the immediate cause has been removed.

Frederick S. Thomas, M.D., Council Bluffs, Ia., Professor Diseases of the Mind, Omaha Medical College, read a paper entitled

GENERAL PARALYSIS, WITH A REPORT OF TWO CASES.

General paralysis is not only a variety of insanity, but a true cerebral disease. According to Clouston it is "as distinct from any other disease as small-pox is from scarlatina." Being a distinct disease clinically and pathologically, it can be defined, and the following definition is given on account of being comprehensive:

"A disease of the cortical part of the brain, characterized by progression, by the combined presence of mental and motor symptoms, the former always including mental enfeeblement and mental facility, and often delusions of grandeur and ideas of morbid expansion of self-satisfaction: the motor deficiencies always including a peculiar defective articulation of words, and always passing through the stages of fibriller convulsions, incoördination paresis, and paralysis; the diseased process spreading to the whole of the nerve tissues in the body; being as yet incurable, and fatal in a few years."

This disease, for convenience sake, has been divided into three stages, the *first* of which is that of fibriller tremblings and slight incoördination of the muscles of speech and facial expression and of mental exaltation with excitement; the *second*, that of muscular incoördination and paresis with mental enfeeblement; and the *third*, that of advanced paresis, or no power of progression, almost inarticulate speech, and at last paralysis with mental extinction.

I desire to report two cases before this society.

Case 1.—J. W., a fine, strong, handsome man of 36 years, without any known hereditary predisposition to insanity, had enjoyed good health up to the time of his present attack. His temperament was sanguine, and he possessed a cheerful disposition, but hasty, and at times boastful. He was fond of making money and preferred the gaming table to more honorable means for a livelihood. He was not dissipated in the worst sense, but he lived freely, taking considerable alcoholic stimulants habitually, eating fairly well, sleeping generally too little, and in regard to sexual intercourse about the average of those of his class.

No history of syphilis could be obtained. For a month or more prior to the death of his wife, acquaintances had noticed his desire to accumulate large amounts of real estate, in some instances paying five or ten dollars as options and promising within thirty days to take the property by paying very large sums of money therefor.

At the grave of his wife he broke completely down and had to be controlled by his friends; was declared insane and sent to one of the hospitals for the insane of our State.

He was quite noisy for awhile, but soon passed into the second stage, was classed "incurable" and was sent to St. Bernards' hospital of Council Bluffs, where he is at the present time.

He is now in the commencement of the third stage; has the appearance of a man of sixty. He is losing flesh gradually, his eyesight is failing rapidly and his walk is more tottering every week.

Case 2.—C. J., a Dane, about 30 years old, resident of the same city for eight years. Was engaged in the saloon business part of the time; accumulated a little property, was quite a free drinker of alcoholic stimulants. His temperament phlegmatic with occasional evidences of irritability and temper. He was somewhat maniacal when first seen by me, with a strong desire to burn his property and kill his wife.

As soon as the stage of excitement passed off he began showing marked symptoms of general paralysis. His speech was thick, his lips showing, as he began speaking, that fatal quiver which marks the disease from all others.

His walk was not firm, and in turning round sharply he did so with uncertainty.

He is at the present time in the second stage of the disease. His weight has increased during the last three or four months by accumulations of adipose tissue, a condition sometimes found in this stage of the disease, and there is some puffiness about the eyes. He sleeps a great deal, in fact, it is not uncommon to find him asleep or in a stupid condition sitting upon one of the benches of the ward.

The patella reflex is nearly absent. He eats well, and at times becomes talkative, but his usual attitude is that of repose, and his behavior that of dreamy indifference.

His eyesight is gradually failing and he seldom asks about any person and never about his wife.

I have thus hastily spoken of two well known characters in the male ward of St. Bernard's Hospital.

These are somewhat typical forms of this disease.

The usual course of this disease is here fairly well illustrated. The pathological appearances in the brain in general paralysis as found by those who have made careful study of same is about as follows.

The encasings and supports of the organ (the brain) are all found to be affected, and the longer the case has rested the more marked are the changes met with. The bones of the calvarium are denser and harder, in many cases the diploë being obliterated, and in many others there is a distinct layer and deposit of new bone on the inside of the inner table of the skull-cap, this being usually of frontal and parietal bones.

In a number of cases there is found under the dura mater, and attached to it, lying between it and the arachnoid, a new substance of a morbid and peculiar kind, commonly called a false membrane. It varies in consistence from the fibrous texture of the dura mater itself to a fibreless jelly. In color from a grayish-white to that of a blood clot; in thickness, from film to a quarter of an inch; in extent, from a small patch or two to a covering of both hemispheres, above and below.

The arachnoid is immensely thickened, and either mottled with white spots or striated along the sulci with white fibrous looking bands. Under it there is what looks like a dull opaque jelly, through which the convolutions dimly appear, and under which great tortuous congested veins meander. Should the arachnoid be pricked, a dirty opaque fluid will escape, being from two to six ounces, that had served really as a compensatory fluid, filling up the space left vacant by the atrophy of the convolutions and brain generally.

The pia mater is thickened, vascular, and tough to an enormous extent. When the pia mater is removed from the convolutions, it is found to adhere to and raise up portions of the outer layer of the gray substance.

The whole gray matter is thinner, especially in the cases that have lasted long. The white substance is often very congested. On opening into the ventricles they are nearly always found enlarged, and the normally delicate epithelial linings are toughened and very rough. There is no nerve tissue that is not found diseased—the retina, the peripheral nerves, the sympathetic ganglia, etc.

What then, is the cause of general paralysis? There can be no doubt that the gray substance in the convolutions in the brain of man is the highest in quality and function of any organic product yet known to nature. That substance reaches its highest development in the male sex between adolescence and middle life. Its uses are called forth in the highest degree in the enlightened races of Europe and America who live in towns or cities. Its physiological abuses by alcohol and other poisoning, by over-strain, by violent energizing stimulated by continuous strong mental and other stimuli up to the point of exhaustion, are the most common under those circumstances. It is a quality of nerve tissue to degenerate in the lines of physiological activity, when that activity ceases either in a higher centre or in the part innervated. General paralysis is a disease of the outer layer of the cerebral convolutions—of the mind tissue in fact. It is in reality a death of that tissue, a premature and sudden senile condition; senility being a slow physiological process of ending, while general paralysis is the quick pathological one.

Second Day—Afternoon Session.

The Society was called to order at 2 P.M. T. J. Beattie, M.D., of Kansas City, Mo., read a paper entitled

METRORRHAGIA OCCURRING ABOUT THE MENOPAUSE.

Within the last few years much progress has been made in nearly every department of gynecology; but notwithstanding this fact, there are some troubles, the etiology of which are still obscure.

For years past it has been conceded by many physicians and has been a belief among the people at large, that when a woman reaches the period of decline of the menstrual function, she nearly always has alarming hæmorrhagic discharges. So universal has been this belief, that when they come in contact with a case of menorrhagia or metrorrhagia in one advanced in life they are satisfied with the diagnosis, that she is in the change of life. Let us consider for a moment the significance of this term, and probably we can treat the subject more satisfactorily.

A girl reaches the age of thirteen or fourteen years, her physical development is more rapid than at any other time; the sexual organs develop rapidly and in a short time, usually preceded by some feeling of weight in the region of the pelvic viscera and of general indisposition; her menstrual flow appears. This flow recurs periodically unless interrupted by pregnancy or some pathological condition, and continues at intervals of about four weeks for a period of thirty years, when she will have reached the age of forty-five or forty-six years. Now her general system, especially the genital organs, undergo a retrograde change.

The periodical flow is scant, irregular and gradually ceases, this is accompanied by a change in the ovaries, they become smaller, the Graffian follicles lose their functionating properties and the organs become contracted, hard and of a pale, whitish appearance, the Fallopian tubes, uterus and vagina—in fact, the entire genital organs undergo a change, which is retrograde in character, until they assume as nearly as possible, the condition that existed previous to the development of the menstrual function. This is about what is provided for by nature, in case she passes the menstrual period physiologically, but how many women pass through this period, without some condition which tends to leave the uterus or its appendages in a diseased condition? Ask yourself how many women you come in contact with, who are advanced in life and have not had troubles that would tend to show some pathological condition. It is for this reason that we find so many women, advanced in life, who are brought to a condition of great weakness on account of the frequent hæmorrhagic discharges.

Our text-books say that these hæmorrhages may be due to a want of resistance to blood pressure, senile rigidity, softening and relaxation of the uterine tissues, or to vasomotor disturbances. No doubt this is true, but in a large percentage of cases, you will find some other cause, which has at least greatly assisted in bringing on this condition.

My object in writing this paper is to urge the more careful examination of women who are troubled in this way, and I am certain, in every case where there is profuse hæmorrhagic discharge, whether it occurs at the change of life or at any other time, you will find a cause, the relief of which will cure the troublesome and many times dangerous condition.

Women who are troubled in this way have usually borne children, and frequently it is possible to trace the cause of their present condition to one of their previous confinements. If involution has been interfered with from a laceration of the cervix or perineum, if the organ is engorged as a result of inflammation of the uterus or surrounding structures, or if a portion of the placenta remains after miscarriage or labor at term, or if from any cause there is an interruption to the free return of the circulation, the uterus is congested, the ovaries and Fallopian tubes become tender and engorged, and the cellular tissue around the organ becomes irritable. If this condition remains, the endometrium is likely to assume a thickened, spongy, varicose condition, which soon becomes aggravated at each subsequent menstrual period. If one is in the decline of menstrual life, and this condition still exists, it is likely to produce alarming, and many times dangerous, hæmorrhagic discharges.

Some time ago, I was summoned hastily to see a woman who was having, as they termed it, a hæmorrhage. When I arrived I found my patient, a woman 48 years of age, the mother of seven or eight children, in a very weakened condition, not only from this attack, but from the frequent occurrence of hæmorrhagic discharges. After making a hasty inquiry into the nature of the trouble, and deeming it necessary that the hæmorrhage should be checked, I made several rolls of cotton, and with them packed the vagina as thoroughly as possible; this I thought sufficient to check the flow of blood, but gradually it made its way through the pledgets of cotton, and I was summoned again. This time I was not satisfied with the vaginal tampon, but removed what had been applied before, and injected about 2 drachms of Monsel's solution directly into the uterine cavity, and then applied the cotton.

Before leaving this time, the patient, who was very much exhausted from the amount of blood lost, said in a weak and trembling voice, "Doctor, I am in the change of life." She had consulted a physician, some time before I saw her, for metrorrhagic and menorrhagic attacks that had been recurring, and was satisfied when he told her that she was in the change of life. The treatment above mentioned succeeded in controlling this attack, and a short time afterwards I examined her case carefully. The uterus was large, tender, the structures around it were in an irritable condition, the cervical canal quite patulous, and the sound passed to the depth of 2½ inches, followed by flow of blood; the endometrium was quite tender, and covered with fungoid growths. After removing these growths by curetting the endometrium, applying stimulating intra-uterine applications, she began to improve. Her general system was built up by tonics, fresh air and good, nutritious food. She has not had a recurrence of the metrorrhagia, but her flow is irregular and scant. Am satisfied that within a short time her flow will cease.

My attention has been especially directed to this subject on account of a number of women who have come under my care in the decline of menstrual life, suffering from metrorrhagia, who have received extensive lacerations about the cervix, and I am of the opinion that they act as a great factor in causing this trouble. Some one may ask, Why has the laceration not troubled them long before? A woman may have quite an extensive injury to the cervix, and still her general health not become seriously impaired; but when it is very extensive, and a woman reaches the time of life when the organ undergoes a retrograde change, there is a lessening in size of the uterus.

Should this contraction be unsymmetrical, which is likely to be the case if much cicatricial tissue exists, the cervix may become closed or very small in size, while the body is still large, and the glands of the endometrium remain quite active. In this way we may have gradually accumulating fluid that will at some future time be expelled, and keep the organ in a state of congestion. My attention was first directed to this subject by an article entitled "The Menopause," by Dr. T. Gaillard Thomas, in which he says: "As the uterus undergoes atrophy, that of the cervix may be out of proportion to the atrophy that is going on in the body. As the body of the uterus contracts, the cervix contracts to a greater degree, and gradually closes, while the uterine mucous membrane is still giving forth a discharge of mucus, as any uterus is apt to do, and the cervix shuts itself up together and prevents the escape of this fluid." I am of the opinion that this is more likely to occur in women who have received extensive lacerations that have never been repaired.

Dr. B. F. Baer, in a paper before the Obstetrical Society of Philadelphia, March 6, 1884, says that in 2,200 cases collected by him, 1,533 occurred between the ages of 20 and 40 years, and 667 for all other ages; only a small percentage occurred during or after the menopause. He also says there were some that when such did occur in the later periods of menstrual life, there was some pathological condition causing it. At this period of life we may come in contact with cases, where no trace whatever can be made as the result of gestation. It is a peculiar fact that some women have a susceptibility to hæmorrhagic attacks, where no perceptible cause can be ascertained, but simply an inherited tendency to a highly vascular and relaxed condition of the organ; these cases are not common, but when it does exist, should the bowels become sluggish, which is a very common factor in almost every trouble, we may have the circulation interfered with, causing an engorgement of the uterus and surrounding structures. If one is in the decline of menstrual life, it may be a great factor in causing profuse hæmorrhagic discharges. One of the most frequent causes of this trouble is growths in or near the uterus. We may have an interstitial fibroma or a polypus suspending itself from some part of the organ.

There is another class of cases, the early diagnosis of which is of great importance. I refer to malignant disease existing in the cervix or body of the organ; it is for the possible existence of this disease, that physicians should always inquire carefully into the etiology of hæmorrhagic discharges during the later periods of life. When malignant disease exists, and can be detected early, we are now in a position to do more to at least alleviate her suffering and prolong life, than we have ever done before. For ages this disease, even in its incipiency, was looked upon as probably the most troublesome of all ailments. Quacks, in their eagerness to deceive patients, have contended that they have specifics for the cure of cancer. As yet we are to find a remedy to eliminate from the system the real cause of this very troublesome and aggravated disease. When it can be detected in its incipiency and entirely removed, its growth may be stopped, at least for a time, but the cause still exists, ready to spring into activity and produce trouble in the most susceptible organs. It has been a disputed question among the leading pathologists and clinical investigators, as to whether or not this disease is of local origin.

In this brief paper I do not care to discuss this question, but again emphasize the importance of carefully investigating every case of metrorrhagia and menorrhagia occurring at the decline of menstrual life. You will many times find a cause, the relief of which will overcome the troublesome hæmorrhage.

J. C. McClintock, A.M., M.D., Professor of Surgery in the Kansas Medical College, Topeka, read by title the following paper:

GUNSHOT WOUND OF THE CHEST—REPORT OF A CASE.

Miss K. H., a young lady of 24 years of age, was shot on the evening of the 23d of September, 1891. The revolver was held at a distance of not more than 8 feet. The wound was temporarily dressed. I saw the case the morning of the 24th, six hours after the injury. The ball from a 38-calibre revolver had entered ½ inch to the right of the spinous process of the eighth dorsal vertebra, had passed directly through the body and fractured the sixth rib in front. The ball was located under the right mamma, through which an incision was made and its removal effected. Its location was diagnosed by the fracture of the rib, by emphysema into the cellular tissue, and by palpation the ball itself could be felt. The patient was expectorating small quantities of blood, was somewhat cyanotic, but was evidently rallying from the shock of the injury. The pleural cavity was filled two-thirds full, probably with blood. A very grave prognosis was given, from the fact that the lung and pleura had undoubtedly been perforated, and that decomposition of the blood in the pleural cavity would almost surely follow. Such decomposition would necessitate opening the chest for drainage. Such a procedure was not further indicated, however, for the progress of the case was toward recovery. There was no fever, no complication of any kind. The wound of entrance of the ball, and that from which the ball was removed, united without suppuration under occlusive dressings.

The first dressing was removed at the end of a week, on account of pain in swallowing. This pain was relieved after the patient was able to be turned on her side, and the second dressing was not disturbed for three weeks.

A note under date of October 31, six weeks after the injury, says: The patient's right lung now occupies only a little more than the upper third of the pleural cavity, the lower and back part of the pleura being still filled with blood. She has been sitting up for about two weeks, and walks about the house. Nothing but a guarded prognosis has been given in this case at any time.

March 17, 1892. An examination of the patient to-day warranted me in pronouncing her perfectly well. The vesicular murmur was clear and distinct in the lower lobes of the lung, and there was no dulness over the region formerly filled with blood.

Daniel Morton, M.D., St. Joseph, Mo., read by title the following paper:

LA GRIPPE OF THE LARYNX.

The true cause of influenza is still a *crux medicorum*. Da

Costa has recently said: "The malady is generally assumed to be due to a microbe. But this is but a probable and intelligent assumption, for the microbe has not been found." Since these words were written, several investigators have claimed the discovery of the offending bacterium, and Koch is almost willing to admit its isolation. If the Pfeiffer-Canon bacillus is the criminal, we certainly must admire the agility with which he, the smallest of the bacillus family, skipped around the globe in the short time of six weeks, and put the whole world to sneezing and coughing. Whatever the etiology may be, however, clinically it is certain that the respiratory passages suffer more than any part of the body. For the first time in the history of Los Angeles, lobar pneumonia appeared during the present epidemic. And it is one part of the respiratory system at a time too, not the entire tract, that is affected. The disease seems to localize itself, just as chronic gonorrhœa consists of diseased patches scattered along the urethral canal. In some symptoms of pneumonia are present, but no physical signs to bear out the diagnosis. In two post-mortems on cases of this kind at the extremes of life, enormous œdema of the lungs was found, the word "juicy" lung describing the condition perfectly. In some a bronchial catarrh is present from the beginning, but in the majority of cases, hoarseness and noises in the ear indicate involvement of the vocal cords, the Eustachian tubes and tympanic cavity. Hoarseness is a symptom often making its appearance at the very beginning, and constituting the only prominent symptom. Again, it has appeared only after the attack had apparently spent its force, and the patient was prepared to believe himself recovered. This latter condition, in my observation, has proven far more serious in its nature than the former, the hoarseness persisting for many days and weeks, and sometimes for months. One case that I saw in consultation with Dr. J. W. Leonard, twelve months after an attack of influenza, was able to talk only in a whisper. There was no cord paralysis whatever, and to-day he has entirely recovered his voice. Those suffering at the very beginning recover the use of the voice much more rapidly and completely. Aphonia has been noticed in none, the hoarseness never going beyond inability to whisper, and varying in every imaginable tone from this to the natural voice. Often accompanying this symptom is a lack of confidence manifested by the patient in the power to control the voice, and many adults who had long since passed the time of life when the voice changes, seemed to return to this unpleasant stage of vocal development. A minister under my care was kept in constant uneasiness during the delivery of his sermons, for fear he would startle his hearers by vocal gymnastics not altogether *apropos* to the subject matter of the discourse. A certain amount of pain accompanies all attempts at vocalization in the earlier stages, but when the huskiness becomes chronic this entirely disappears. In some cases, after the voice is restored to its normal tone, a relapse occurs, and after a second restoration dysphonia again makes its appearance. Hoarseness may be caused by looseness of the vocal cords due to paralysis of the tensors of the cords, the crico-thyroid muscles, or by inflammatory thickening of the mucous membrane lining the cords, but I should like to emphasize the point that hoarseness, which is considered the most characteristic symptom of a laryngitis, may be caused by disease entirely extrinsic to the larynx itself. This is the case in aortic aneurism when pressure produces paralysis of the organ.

Tickling of the Throat is quite common in a large number of cases, and is one of the most stubborn symptoms to relieve. It may cause no special annoyance, or it may be so severe as to produce a cough that will harass the patient to a serious degree. I do not refer to the tickling of an elongated uvula. This "Isrip cough," as it is called, perhaps gives more annoyance to the physician than any other symptom. It often does not appear save at night, when it deprives the patient of rest and may reduce him to a serious degree of nervousness. When persisting for weeks, as it often does, unless properly treated, it is plainly perceptible how such a result may be produced. There is no expectoration except a glairy mucus resembling the white of an egg well whipped. Treatment directed toward the lungs is wholly ineffectual. Ammonia, scilla, paregoric, ipecacuanha, chloroform and the whole list of cough remedies are of no avail. The source of irritation is in the larynx and trachea, and the remedies must be addressed to these parts. I do not here refer to the cough of a granular pharynx, nor to one produced by hypertrophied tissue at the base of the tongue. Physical examination of the lungs will fail to discover a single râle.

Laryngeal examination shows a reddened and thickened mucous membrane lining the larynx above the true cords and covering them as well. Epiglottis congested and twigs of blood vessels plainly perceptible on the laryngeal surface, some branches projecting over the edge. The abductors and adductors in perfect condition, so that the cords are easily approximated or separated at will thus ruling out any paresis. Nothing to account for voice-huskiness except thickening of mucous membrane covering cords. Later on the mucous membrane becomes dry and then follows tickling and consequent cough. The pharynx and naso-pharynx and nose are coincidentally affected also, though not to the same degree.

The constitutional treatment will vary according to the views of the physician as to the origin of the malady. He is the most successful specialist who recognizes the existence of diatheses, who looks for a constitutional habit in his patient and who combats this condition at the same time that he is employing local treatment. There is a cachexia and the laryngitis is simply one of its manifestations. Treat the cachexia as well as its manifestation.

I will not review the innumerable plans of treatment. Phenacetine for the pains, salol and salycilates, lithia, or lithia waters—Garrod, Spa, Sander, to assist in the elimination of urea products, whisky as a stimulant, Dover's powder as a sudorific, cocoa preparations as an anti-melancholic, maltine with yerba santa, strychnia as a nerve tonic, have been the chief remedies employed, using first one, then another as indications demanded.

Locally I have used albolene and liquid petroleum sprays containing in solution eucalyptol, menthol, iodine. Argenti nitras is particularly useful, especially if the remedy be applied to the pharynx as well as larynx. I have never treated these cases without, at the same time, correcting any lesions in the nose and pharynx. Counter-irritation over the larynx and trachea, especially with the cautery, is very useful.

In recapitulation, allow me to say that laryngitis associated with influenza is particularly severe in its nature, post la grippe hoarseness is the most stubborn form to treat, relapses of dysphonia are very frequent, the "grip cough" is a laryngeal cough, the treatment must be largely constitutional.

P. I. Leonard, M.D., St. Joseph, Mo., read by title the following paper

PRESENT PROBLEMS IN BACTERIOLOGY.

Upon the medical horizon we see the dawn of a new world. The science of medicine is in a state of transition and the vast progress made recently gives fair promise of a new epoch in the conception of disease and in its mode of treatment.

A study of bacteriology and biological chemistry interests the practical physician, as he expects to derive useful information for the prevention and the cure of disease.

The present problem of bacteriology is to explain the true relation existing between the bacteria and their products to the cells and juices of the living organism in health and disease.

From the mythical in medicine we advance to the theoretical, and the step that is being made promises to inaugurate rational practice based upon definite knowledge.

In taking a retrospective glance of the history of medicine and in comparing it with the great advance of to-day, we should not vaunt out preëminence too highly, for the judgment of posterity will accuse our own time of human weakness and blame us for our want of foresight.

By disease we understand a deviation of some of the vital manifestations from the normal. The difference in reaction to an injury or a poison setting up grave disturbance in one tissue or organ, while they are harmless to others, gives evidence of a specific predisposition of individual tissues to a specific disorder. When we regard the great variety of diseases and the great diversity of structure, and therefore of predisposition, we can see the great difficulty of determining the true nature and origin of disease in man.

Humoral pathology which referred the origin of disease to an abnormal condition of the blood, solidar pathology to the tissues and dynamic pathology to unseen forces, but especially to the nervous system, all took a one-sided view of disease and now they are only of historical interest. Virchow has given us cellular pathology, which comes very near answering all the questions involved. Pasteur and Koch have started a new system called bacteriology, and their ardent disciples have attempted to explain all disease through the action of parasites.

Although there is a lively reaction against pathogenic microbes as the first cause of disease, some speaking of "the rise and fall of the microbe," inferring that it will only be of historical interest in the future, we are still waiting for decisive proof.

It matters not how complete experimental pathology and bacteriology may become, for the certainty of results regarding the pathological physiology of man, we must recur to the clinical observer. However great the similarity between the organization of man and the higher animals, it is still only so by analogy and never to be considered exactly the same. For instance, we can never have identical brain or nervous diseases. There is an immense gap between bouillon and gelatine plates to the cell life of a human organism. The fact that many acting causes of disease in man are inactive in animals, shows that there are fine differences in the respective chemistry of the blood and the juices at present unknown. The highest task of general pathology is to teach us a knowledge of the laws of disease, and we will never understand these if we pursue any narrow path of investigation and reasoning.

It is the tyro in science who is generally so positive about his deductions, and to him mere possibilities crystallize into realities.

It cannot be denied that microörganisms sustain a very intimate relation, especially to the infectious diseases, but their mode of action in a causal relation is as yet wrapped in a mist of vagueness and uncertainty.

An infection is due to a poison derived from man, animals or a miasma, capable of further development, and which (in contra-distinction to an intoxication) depends more upon the quality than the quantity of the virus. The origin of the infection is external, and as we find bacteria capable of this "further development" by their powers of multiplication, and while they are intimately associated with infectious diseases, we infer that they stand in a casual relation.

Bacteria which are supposed to possess these infectious qualities are pathogenic, and those which are harmless are non-pathogenic. But matters are not quite so simple, as we shall see.

We cannot draw a line separating pathogenic from non-pathogenic bacteria, they are nosogenic under some conditions, and harmless under others. When bacteriologists begin to attempt a demonstration of the power of pathogenic organisms the difficulties begin to assert themselves. For instance, virulent and attenuated bacilli anthracis cannot be told apart, and they occupy the same relation as pathogenic and non-pathogenic.

We use this classification for the reason that we have no other. The mutability of bacteria is a problem with such men as Nägeli, Davaine, Buchner and Wernich in its favor, while Koch and his pupils claim the pathogenic bacteria to be specific organisms. Nägeli says that there is no need even of a division into two specific forms, and he says the same organism may bring about the sourness of milk, the fermentation of wine or the putrefaction of albuminous substances, sometimes producing typhus fever, cholera or intermittent fever.

Pathogenic organisms act mechanically by their presence, by withdrawing nutrition and oxygen from the cells, but their chief and most important quality is their poisonousness or virulence. If we regard the relation of the microörganisms to the essence of the disease, we wish to know whether the organism is identical with the virus, or if the latter is the product of the former. The excretions of pathogenic organisms have been studied by Brieger and others, who have separated a large number of toxic alkaloids of unstable composition known under the general name of ptomaines. In all infections we find bacteria with different excretions. Brieger separated from the cholera, typhus and tetanus bacilli specific substances, proved to be genuine toxines, which, if inoculated into animals, produced analogous symptoms to those caused by the bacteria themselves. From this knowledge the pathogenic action of bacteria is principally explained, and as one kind can excrete several of these toxic poisons, under different conditions, they are subject to considerable variations.

Roger proves that the harmless bacterium prodigiosus in conjunction with another harmless bacterium can become the cause of disease. Pasteur and Chamberland have separated, by means of filters, the organisms from their excretions, and the latter without germs showed no difference in the effect. These ptomaines may be taken in as food and are therefore of interest.

We have also a difference in the virulence of bacteria in different animals. The bacilli of glanders are particularly virulent on field mice, while white mice are immune. By feeding the latter with phlorodzin, he produced in them a diabetic condition, and they became inoculable. Bujevid says that staphylococci aureus have no effect on the subcutaneous cellular tissue of the rats and rabbits unless you mix the solution with sugar, and then you produce a strong suppuration. Nearly all bacilli lose their virulence gradually on artificial foods, in adding drugs to the cultures, in passing them through animals, breeding them under pressure and in exposing them to a high temperature. White rats are insusceptible to anthrax, and according to Behring their blood and tissue juices possess an extremely high degree of alkalescence, so that the bacilli cannot live in it.

The composition of the blood is the special expression of the metabolism of the cells, it has no definite chemical formula, nor is it always uniform. Any species of bacteria introduced into the blood vessels disappear, thence, in a short time. Wyssokowitsch says they go to the spleen, liver or spinal marrow, and there either perish or multiply, are infective or harmless.

Behring has shown the germ-killing power of the blood, and Nuttal that of the aqueous humor, ascitic fluid, and other juices of the body. Buchner says the plasma of the blood destroys the bacilli, the power depending upon the salts which stand in intimate relation to the albuminoid matter, the quantity and quality of the latter allowing organisms either to grow or to die. This germ-killing power of the blood disappears under the influence of a high temperature, consequently fevers would offer an inducement for the bacilli to grow. If the body resists the invasion of an infectious poison, it is immune against this special morbific agent. Buchner says of congenital immunity, that it is something specific, dependent on the specific physiological properties, on the one hand, of the generating factors of disease; on the other, of the animal body or its individual organs and tissues. He has three conceptions as to the origin of immunity:

1. Want of nutritive material in the tissues and juices, whereby the bacteria are destroyed.
2. Phagocytosis and chemotaxis.
3. Prophylactic substances in the animal juices.

It is probable that the processes by which the body resists infections are chiefly of a chemical nature, and that the body furnishes antibiotic or antitoxic influences for its protection. Phagocystosis is entirely insufficient by itself to take much share in the protection of the body, as it is most reasonable that leucocytes can only attack debilitated or dead bacteria. This hand to hand encounter and struggle for survival between bacteria and leucocytes is very romantic, but the majority of observers deny this property of phagocytes.

Mr. Kauthak, at a recent meeting of the Pathological Society of London, maintains what is probably our present state of knowledge about immunity. He said: "The primary cause of immunity must be sought beyond the leucocyte or phagocyte, and also beyond the fluids of the body, and, according to the maxims of cellular pathology, depend on changes in the cell life of the organism, which at present we were unable to understand."

Many experiments have been made to produce artificial immunity by taking the extract of the tissues or the blood of an animal enjoying immunity as a remedy against the corresponding infectious disease. Pasteur, taking for granted that cow-pox virus is an attenuated form of small-pox virus, is said to have succeeded in producing immunity in chicken cholera, anthrax, swine erysipelas, and in hydrophobia.

Hankin claims that a few drops of rat's serum injected into a mouse rendered it as insusceptible to anthrax as the rat.

Dr. Wright says he has recently confirmed Woolbridge's experiments of producing immunity against anthrax by the injection of tissue fibrinogen—a nucleo-albumin.

Klemperer says that in animals one attack of pneumonia causes a temporary immunity against another, but this does not hold true in man. He says the pneumococcus generates a poisonous substance which can be isolated—pneumotoxin, this can set up a febrile condition which lasts several days, after which another substance is found called anti-pneumotoxin which neutralizes the pneumotoxin. The crisis of pneumonia occurs as soon as anti-pneumotoxin is produced in sufficient quantity. Klemperer claims to have cured pneumonic septicæmia by injecting the serum of immune animals directly into the circulation.

Behring and Kitasato claim to have done the same for tetanus and diphtheria. Emmerich adds to this list swine erysipelas and croupous pneumonia.

Bouchard and Emmerich claim to have cured rabbits inoculated with virulent anthrax bacilli by bringing a considerable quantity of erysipelas micrococci, of green pus or other micrococci, into the circulation either before or after the anthrax inoculation. These facts are interesting, but in the attempt to apply them to the human body we are unpleasantly disappointed.

From the ground we have covered we see that but few, if any, bacteria are in a position to answer the requirement necessary, as laid down by Koch and others for a pathogenic organism. In each species there are links wanting for certain proof, and perhaps the famous bacteria are more of a consequence than a cause of disordered action.

Chemical biology shows that each living cell is a factory of toxic alkaloids called leucomaines, and if they are not eliminated from the body, they act powerfully upon the nervous centers, and become the first cause of a pathological disorder.

To cite an example, the life action of muscle and nerve cells and other of our tissues, results in breaking up the protoplasm into other leucomaines. Creatinine and anthocreatintine are produced by muscular activity, and in excess in the blood they cause feelings of depression, drowsiness, extreme fatigue, and may be even vomiting. Great depression following excitement is probably the result of an accumulation of an excess of leucomaines in the blood.

Brunton thinks biliousness is most likely due to formation of poisonous alkaloids in those who eat largely of proteids. The liver, kidneys and other organs are now believed to have a constructive as well as an excretory function, and our knowledge of diet, digestion and nutrition are continually changing owing to the advances made in physiological chemistry. Brown-Séquard and D'Arsonval assert that each gland of the body has two functions first, that of secreting a substance from the blood, and second that of supplying to the blood some needed constituent, and it is these latter substances they propose to obtain and to use therapeutically. They report a number of cases of ataxia, diabetes and pulmonary tuberculosis which have been benefited, but these men who experiment are a good deal like those surgeons who always find in the abdominal cavity what they are looking for. Hankin gives a physiological classification of these defensive proteids and he divides them into sozins, which are proteids present in the normal animals, and into phylaxins or those proteids present in immense animals. Myco-sozins and myco-phylaxins act by killing microbes, while toxo-sozins and toxo-phylaxins act by destroying the microbic products. To what all these things will lead is difficult to guess, because so little is definitely established, and yet, again, we are in possession of a great deal of information in the right direction.

In the light of our present state of knowledge of the bacteria and the body cells, if protective vaccines fail, at any rate, we are warranted to draw the following practical inferences in the treatment of infectious and toxic diseases. The body protects itself against auto-intoxication and infections by the eliminating powers of the kidneys, the alimentary canal, while the liver is supposed to act as a filter for the body. If the hepatic organ masters the infective or toxic agent the body is protected, if not, there is a systemic intoxication or infection. Consequently we derive a chief general indication for the maintenance of health and the treatment of all diseases in watching the excretory organs and in the proper use of diuretics, sudorifics and purgatives.

On motion, the society adjourned to meet at Council Bluffs, Iowa, third Thursday in September, 1892.

Chicago Medico-Legal Society.

March 5, 1892.

(Continued from page 463.)

Harold N. Moyer, M.D., Adjunct Professor of the Practice of Medicine, Rush Medical College, Chicago, read a paper entitled

EXPERTS AND EXPERT TESTIMONY.

It is apparent that in a simple state of society where all individuals are engaged in similar occupations, jurisprudence must find its simplest expression. In a community composed largely of farmers each man is an expert in matters of agriculture and the litigation of such communities must partake of the simple character of its occupations. The same will be true of any community, of small numbers widely scattered, in which each individual largely performs most offices for himself.

When, however, we aggregate individuals and segregate employments there is a more complicated social fabric. Particularly will this be true in those communities in which employments are specialized to a great degree. Where handicrafts and professions are differentiated to such an extent that each individual devotes his entire attention to a particular production or subject, it is manifest that by so doing he acquires particular and precise knowledge, much greater than that possessed by the general average of the community.

One of the most distinguishing marks of our modern civilization is the unparalleled differentiation and specialization of employments; so complete is this that each individual is more and more dependent on every other individual. In proportion as these influences are extended and accentuated, the jurisprudence of our times must become more complicated.

Take for example, the common carrier, a business that now represents billions of capital and indirectly hundreds of thousands of persons. It furnishes a vast amount of litigation that was unheard of when English law was new. Whether spinal concussion existed in those days we are not now able to say, but it could scarcely have been a contention in a suit at law because people so rarely exposed themselves to the negligence of a common carrier. Contrast this primitive condition with the present age, in which millions of people daily commit themselves to the care of others. The slightest negligence of whom, resulting in personal injury may furnish ground for litigation. Is it not a matter of wonder that suits of this character are as infrequent as they are?

It goes without saying that the increased differentiation in employments has produced a vast army of men, perhaps one-half of the active part of the community, who are especially skilled in some direction, and who have expert knowledge of some particular process or trade; it is but natural that courts should endeavor to avail themselves of this knowledge. Indeed the administration of justice, in our day, would be practically impossible without such aid.

Granting then that we have shown the necessity of expert evidence and that this necessity will probably grow as time advances, and our civilization becomes more complicated. we may at once pass to a consideration of the present standing of experts in courts, the manner in which testimony is introduced, and to a discussion of what, if any, improvements can be made in present methods.

At the outset we will concede that the present system is not perfect. But, we would be pleased to have some one point out some system that is perfect. Even the administration of the law can scarcely be considered too accurate when it is necessary for our appellate court to reverse and remand nearly one-half the cases considered at a single term—a brief examination of our drainage system would convince one that the Creator was wise when he kept the ordering of the planets and stars as His own special business. These and like examples ought to teach us that absolute perfection is rarely attained in human affairs, that the true measure is one of utility and adaptibility. No measure or system should be condemned merely because defects may be found, but the question should always be asked, is it the best that can be done under the circumstances?

The law makes a broad distinction between matters of fact and matters of opinion. It is apparent that opinion evidence to be of any value must be given by some one who has special, that is more than ordinary knowledge of the particular subject, in other words an expert. As to who is, and who is not an expert, must be largely left to the particular circumstances in each case. The ordinary witness shades into the expert, just as ordinary testimony passes by imperceptible degrees into opinion testimony. For example, in a matter of insanity, a non-professional witness may give his opinion as to the mental condition of a person because he has expert knowledge—that is, knowledge not possessed by the general community, of the character and habits of the particular person. Of course, such testimony does not equal in value that of one who has been long trained in the study of normal and aberrent mentality, though in a way it is quite as expert. The instance cited, shows that it is impossible to draw a hard and fast line between the expert and the ordinary witness. And this is one of the chief difficulties in suggesting improvements in the present system.

As one of our judges puts it: "An examination of the cases in which the courts have passed on the competency of experts shows a lamentable confusion and mixing up of matter of fact with matter of law." The true reason of this obscurity has never yet been stated, but has always been referred to defective statement or confused rulings, when as a matter of fact it is a difficulty inherent in the subject itself. It is the same difficulty that we have in measuring mental capacity, we assume an arbitrary line beyond which a person is considered to be insane, when nature makes no such distinction. Sanity and insanity shade into each other, just as twilight passes into darkness, but no one can give the exact point where one leaves off and the other begins; the result has been that no satisfactory rule of law for measuring mental capacity has yet been formulated. And for the same reason, because there is no natural division between opinion testimony and that relating to facts, there has been a wide diversity in ruling. No jurist seems to have yet discovered this as the true cause of the "lamentable confusion" observed in the deliverances of our courts.

In addition to the confused rulings as to who are experts we find a wide variation in the opinion of courts as to the value of expert medical testimony, for instance: The Supreme Court of Illinois has said if there was any kind of testimony not only of no value, but even worse, it was that of medical experts; while the supreme Court of Texas says that the opinions of medical men are received with great respect and consideration. Again the Supreme Court of Michigan says that the scope of medical testimony ought not to be extended, while the Supreme Court of Pennsylvania finds the knowledge and experience of medical men of great value. In the light of such contradictory statements, we must either conclude that there is an immense variation in medical qualifications in different parts of the country, or else that the dictum of our legal friends is of no greater value than the testimony they are discussing.

The law must always deal with general rules, and we doubt if our bar will ever consent to any special ruling by which a certain class of opinion testimony shall be governed that is not applicable to all others. The medical profession has been oftenest heard in opposition to the present order of things. From the tone of much that has been written one would conclude that medical opinion testimony was about the only kind that was heard in our courts, when as a matter of fact, it forms but a small part of expert testimony as a whole. The mechanic, merchant, clerk, even the ordinary laborer frequently give testimony that is, in every sense, as expert as that given by the most accomplished chemist or physicist.

The chief objection urged to the present system is that much of the testimony is consciously or unconsciously biased, though a great deal that has been said on this subject is gross exaggeration. In a sense a man upon the witness stand may feel that his opinions are at stake and that they are to be defended, by fair means if he can, but failing that by the best means at hand. This mental attitude, while occasionally seen, we believe to be rare.

One thing, more than another, that has tended to bring medical opinion testimony into discredit as compared with other varieties, is that medicine is not an exact science. The problems that we approach are to be largely measured by judgment and experience, and as long as such is the case, perhaps courts and the general public are justified in looking askance at our claims of infallibility. In proportion as a science can be reduced to mathematical formulæ, can it be considered exact; mechanics, chemistry, physics and astronomy have in part or wholly reached this degree of accuracy. Unfortunately the facts of biology, physiology and medicine depend very much upon the manner in which they are stated, the change of an adjective or even the shifting of accent may so affect verbal definition as to show differences that are more apparent than real. In many of these respects medicine presents exactly the same disabilities as the law. We are all familiar with the way in which trials are conducted: one attorney presents the side of the plaintiff in the worst favorable possible light. Of course,he is not expected to wilfully distort testimony, but it has now and then been charged. Does any one in consequence suggest any radical changes in the manner in which our courts shall try cases? The present attitude of the expert is something analogous to that of the attorney, and it is probable that there is a certain justness and fairness in the present arrangement that could not be otherwise attained. Like the law,medicine is not an exact science, their rules and formulæ are largely influenced by judgment and interpretation. Chloride of sodium and nitrate of silver in solution when mixed will throw down a white flocculent precipitate; the result is constant and invariable. If law and medicine had facts of this character to deal with it would be a simple matter to suggest improvements in both the practice of law and the position of the medical expert.

We venture the prediction that if any of the proposed changes regarding the methods of expert testimony had obtained at the time of its first introduction we should now find a large number clamoring for the introduction of the present system. It is instructive in this connection to read the proceedings of the International Congress of Forensic Medicine held in Paris in 1889. Those taking part in the debate included some of the best criminal lawyers in Paris as well as many physicians eminent in medical jurisprudence. The system in vogue in France is that of a commission to whom are referred all questions calling for medical experts.

Of late this system has become unpopular, because it is believed to operate unduly against the accused. At that meeting several propositions were advanced, and submitted to a vote; one directing that in all cases at least two experts should be employed was carried unaminously, while a second, that they should be appointed by the judge,was carried by a small majority, a large minority voting in favor of each side naming their own expert, substantially the system followed in this country. In view of the conflicting testimony from countries in which the commission plan has been thoroughly tried we certainly ought to approach any contemplated changes in our methods with great care.

Much of the dissatisfaction experienced by physicians with the present manner of giving expert testimony is that they leave the stand feeling that they have not expressed themselves fully on the subject in hand or else they are conscious that their views have been seriously warped by cross-examination. In a great measure this arises from a want of understanding of the common rules of evidence and the rights of a witness. It is not an infrequent observation in our courts to see a witness stumbling along, mixing objective signs, with subjective sensations and statements made to him by the patient, until the whole matter is in such hopeless confusion that it is impossible for the judge to make an intelligent ruling. There is little complaint on the part of those who are able to present facts and theories in a logical and orderly manner and in plain non-technical language, in other words, those who have mastered the art of the medical-jurist. It is difficult to see how this is to be remedied by any change in method, as obscure statements, a mixing of facts with opinions, or hearsay evidence, is sure to be confusing no matter how it is brought into court.

I shall not quote extensively from the literature of the subject, as a mere recounting of the various plans proposed would exceed the limits of my paper. They may, however, be divided into two classes: First, those which invade the province of the jury and practically decide that portion of the case relating to the special facts. Experts are appointed to investigate or listen to testimony and submit a report in writing to guide the court and jury. The second class is much less radical and simply alters the method by which experts shall be summoned. Perhaps the best of these, and one that would involve the least change in our present procedure, would be to have the judge appoint the experts to examine into the facts at issue, or listen to the testimony, and then take the stand in the usual way. This would continue the present system of direct and cross-examination which we believe to be essential to the proper presentation of the views of both prosecution and defense. It would, however, obviate some of the grosser evils of the present system, in which lawyers go out hunting for experts. It is a not infrequent experience to have them walk into the physician's office and give their theory of a case or propound a hypothetical question; if his opinion is unfavorable, the search is continued until favorable results are reached, or they conclude that expert testimony would be of no value in their case. In having the experts selected by the court all this would be done away with. Their compensation should be taxed as part of the costs of the case. Some degree of flexibility could be obtained by varying the number, and the manner in which they were to testify, whether after hearing the testimony, or to hypothetical questions, or to examine into facts. It might also be wise to have a preliminary examination, something like that to which jurors are subjected, touching prejudice, previously formed opinions, knowledge of the case, etc. This would naturally give rise to well founded objections that could be considered by the court. Of course, all of these matters could be gone into on cross-examination, but it would be much better to have it brought out before hand so as to keep expert testimony free from shadows of this character.

One clear objection to the plan proposed relates to experts who may have knowledge of facts, acquired before any legal proceedings have been begun. In many cases a physician has treated or examined a patient long before there is any thought of a law-suit. The opinion of such persons formed at the time may be of more value than subsequent ones, or that of any expert based on a description of the facts. Whether these difficulties can be overcome and a clear distinction made in practice between opinion evidence, previously acquired, or that which is to be obtained during the progress of a trial, is a question for judges and lawyers. If this contingency can be provided for it is certain that the selection of experts by the court presents some decided advantages over our present methods.

From a consideration of all the facts the following conclusions seem to be justified:

1. The present system of expert medical evidence is admittedly faulty.
2. In part this is due to inherent difficulty of the subject.
3. In part to defective understanding of the elementary rules governing the introduction of evidence, by witnesses.
4. In part to the conflicting rulings of courts.
5. Any change, if made, should be done with great caution and only after the most mature deliberation.
6. The present inexact state of medical science does not warrant the invasion of the province of the jury, or the abridgment of cross-examination.
7. The only change at present justified is one altering the manner in which experts are to be summoned.
8. The appointment of official experts is not advisable under our present political system.

(*To be concluded.*)

Kansas City Academy of Medicine.

Meeting of March 26.

Dr. H. C. Crowell, Gynecologist to All Saints Hospital Kansas City, Mo., read a paper upon

THE BEST METHOD TO FOLLOW IN PERFORMING LAPAROTOMY.

The points to be discussed are those that are not altogether settled—things pertaining to abdominal section concerning which there is a considerable difference of opinion among operators.

Preparation.—The item of first consideration, when time allows, is *preparation.* The patient is usually cleaned out by a free purge of sulphate of magnesia, compound licorice powder or other evacuant, for two days prior to operation. Question: Is there any preference as to agent employed? Do any of the various remedies usually employed predispose to the formation of gas in the alimentary tract, and thus give rise to distress after operation?

The abdomen is shaved and washed the evening previous to operation, the skin is then rubbed with turpentine, washed with bichloride solution (1–2,000), and covered with towels wrung out of bichloride solution; these are left on until the patient is put upon the operating table. Question: Is any advantage derived from this procedure? It is done to destroy or check development of germs. Kelly says it will do so for twenty-four hours—or until after operation.

Anæsthetic.—What anæsthetic shall be used? Ether is generally employed in the East, but here chloroform is almost exclusively administered in laparotomies, as well as all other operations; it appears to be safe, and certainly causes less vomiting, and possibly less shock. Question: Is not chloroform, in abdominal surgery, equally as safe as ether if properly given?

Protection of Field of Operation.—Upon the abdomen and about the incision are spread towels wrung out of hot bichloride solution. Question: Would it not be better to employ dry antiseptic towels or gauze? The wet towels cool in a short time, and can but chill the surface where applied, and thus favor shock.

The Incision.—The incision is made by a free and deep cut —down to the peritoneum at one stroke, if possible. We have been taught to go through the median line. Question: Should the cut be through the linea alba, or would it be better, and form a stronger barrier against future hernial protrusions, if made through one of the recti muscles? In making the cut, most operators separate the muscles with the fingers and handle of the scalpel; this is less bloody than a free, clean cut with the blade of the knife, since it does not give as good results. In only one case observed thus far has a hernia occurred when the incision was made in the rectus; this was in a patient 64 years of age (operation for intestinal obstruction), where the sutures were run "through and through," including peritoneum, vessels, fascia, adipose tissue and skin in each stitch. Here the hernia was probably due to extreme age, with consequent lack of reparative energy.

Irrigation and Drainage.—In cases where extensive adhesions have been severed, or there has been an escape of the contents of a cyst or abscess, douches of hot water should be employed to prevent central oozing or thoroughly cleanse the peritoneal cavity. The water may be poured from a pitcher in the absence of the gravity douche, which is more effective in reaching the recesses of the pelvis. After douching, the cavity is sponged out, to remove clots or débris, and to ascertain if there be oozing. Question: Should all cases thus treated require a drainage tube? We have heretofore been in the habit of closing without drainage if there were little hæmorrhage or septic matter, but eminent authority, as the Prices, Cushing, Sänger and others, assures us that our patients will pursue a more even and satisfactory course if a drainage tube be inserted in every case where adhesions have been severed. It is questionable if the drainage tube is of any service in the removal of purulent material. So far as drainage for serum is concerned, if we have introduced no septic germs, there will be no decomposition of the serum, and the peritoneum can absorb all and more than we may expect to be exuded. Everything conduces to a free absorption, as the patient takes nothing to fill the blood-vessels or lacteals for thirty-six hours or more.

Ligature for Pedicle.—Ligature of the pedicle is done with floss silk, which is to be regarded as superior to braided silk. It is very strong, and so can be tied tightly. Some discussion may arise as to the superiority of silk to catgut. It is claimed as an argument against silk that it is non-absorbable, and may cause trouble; it is also said that catgut accomplishes all that is desired, is readily absorbed, and thus is less likely to cause trouble. It is to be feared, however, because it may possibly be too rapidly absorbed, and give a hæmorrhage when least expected.

Closure of Wound.—For closing the wound, a continuous suture of fine catgut is to be preferred for sewing the peritoneum, followed by a number of interrupted sutures of silkworm gut passing through the skin, adipose tissue, fascia and muscles and picking up the raphe made in sewing the peritoneum, and coming out on the opposite side; these sutures are then laid back on each side and the fascia closed with catgut sutures, after which the first sutures are tied. Question: Is this method of sewing in three layers, bringing into perfect and certain approximation the several layers, any stronger or safer against subsequent hernial protrusions than the including of all the tissues in one circular suture? It certainly takes much longer, and despatch is an element of success to be appreciated and cultivated. Some of the best operators use this quick method of closure, and claim perfectly satisfactory results.

Dressing.—The after dressing consists of dusting with subiodide of bismuth, and the application of bichloride gauze, cotton and adhesive strips to hold in place. But by this dressing, the lower part of the wound is but poorly protected; to alleviate this, one may apply an iodoform collodion dressing with the most gratifying results; this will also do much to prevent stitch abscesses.

After Treatment.—After the patient is put to bed she gets nothing but teaspoonful doses of hot water, with enemas of beef juice, salt, milk and whiskey, if there has been much loss of blood. Small doses of nux vomica should be given early (on the first day usually) as a heart stimulant as well as for its action in promoting peristalsis. Morphine has no place in abdominal surgery unless the patient suffers unusual pain; restlessness can usually be controlled by sulfonal.

Hot vaginal douches are also of service for the relief of pain. For vomiting calomel and soda may be given, even as early as the first day. A saline cathartic should be given on the second day, followed in about four hours by an enema containing sulphate of magnesia, glycerine and a little turpentine. The patient need not be kept on the back, but allowed to turn from side to side, gently. Cramps in the limbs may be overcome by bandaging from below upward with flannel. The diet is kept low for five or six days, and a Seidlitz powder is given nearly every morning to maintain active peristalsis. After getting up the patient is instructed to wear an abdominal supporter for at least one year; but within the past year, Watkins, of Chicago, has advocated the non-use of such supporters on the ground that it serves to restrict muscular action with consequent atrophy and increased liability to hernia. Question: Should or should not an abdominal supporter be ordered after abdominal section?"

Dr. J. F. Binnie: On the whole, I think it is best to prepare patients for laparotomy in the same way as for operations about the rectum. I like to give a five grain blue pill thirty-six hours, and a dose of Hunyadi water or other saline twenty-four hours before the operation, while an enema is given just before the patient goes upon the table. If the diet has been regulated properly, such a course puts the intestines in the best possible order for our purposes. In abdominal surgery chloroform is, on the whole, preferable to ether, as with the former respiration is quieter and there is less coughing, while the parts are not apt to be so engorged as when ether is given. In opening the abdominal cavity it is a matter of indifference to me whether I go through the linea alba or not; very possibly hernia would be of less frequent occurrence if we always went through the rectus. Dr. Crowell discusses the question of drainage after flushing the peritoneum; as I would only make use of flushing when I feared pus, colloid material or some other uncleanness had escaped into the cavity, I certainly use drainage whenever I irrigate. In ligating the adhesions and pedicles in most cases, at least, good juniper-alcohol cat-gut answers most admirably; from its use I have never seen any ill effects. As time passes I use silk less and less. I practically never use silk to ligate a vessel in the surgery of other regions, and fail to see why, if it be safe when applied to the femoral artery, it should not be safe on an ovarian pedicle. The convenience of catgut for sutures is self-evident, and I use it almost to the exclusion of everything else. As a dressing I use an iodine containing powder, and sublimate gauze. If everything goes well I substitute for this at the first dressing, a thin layer of cotton and collodion. In small wounds I apply the collodion at the conclusion of the operation and find that it acts well, but where the wound is large I feel safer if, for the first two or three days, the dressing applied is one capable of absorbing and keeping pure any little blood or serum which may exude.

Dr. T. J. Beattie: Dr. Crowell's method of management corresponds closely to my own in most particulars, but I question whether it is best to purge the patient so thoroughly for thirty-six hours, as this and the light diet usually enjoined will render most women too weak; I am satisfied if the patient's bowels move freely just before operation. And I feed heavily up to within twelve hours of the operation, then administering the saline cathartic. As an anæsthetic I have always used chloroform and with unqualified satisfaction; I do not believe it is, in the hands of a careful man, any more dangerous than ether, and it has no bad after effects like ether. For closing the wound I prefer one set of stitches. With the pedicle, silk floss has always answered admirably; the braided is hard and not so easily sterilized and encysted. I have had one case of suppuration of the pedicle where braided silk was used; my patient developed fever though the external wound had healed by primary union; upon opening up the pelvic cavity at least a pint of pus was discharged from the abscess in the pedicles; free drainage was established and the patient made a good, though slow recovery.

Dr. S. T. Gant: How long after the operation did the symptoms of pus-formation make their appearance?

Dr. Beatty: The fever began about the fifth or sixth day.

Dr. Gant: It may may be asked why I, a "rectologist," should participate in a discussion by gynecologists; but the intimacy between rectal and genital diseases needs no explanation, and besides in a long experience as house-surgeon at the New York Post-Graduate Hospital, I had a very valuable experience in abdominal work. My observation teaches me that it is of prime importance to clean out the bowels thoroughly, and for this purpose I believe compound licorice powder acts best; it may be followed by a Seidlitz powder. As for the anæsthetic, in the New York hospital I had to administer ether from five to a dozen times a day while Dr. Nillson was the only operator who preferred chloroform. I have become greatly prejudiced against ether because of the kidney trouble severe vomiting and other bad effects and I am glad to see chloroform almost universally employed in the West and South. As to the incision, to go through the rectus muscle is certainly the correct thing from a physiological standpoint. I should be afraid that catgut would loosen sufficiently to cause bleeding from the pedicle; silk certainly will not give way and it cannot give rise to trouble if it be absolutely sterile when introduced. Union by first intention is sometimes not obtained; in such a case two strips of surgeon's plaster may be stuck parallel to the margin of the wounds and joined together by threads passed across; the surface of the wound can be repeatedly washed and swabbed out with balsam of Peru to cause rapid granulation, antiseptic dressing being placed over it as usual; no pus should form.

Dr. Emory Lanphear: Briefly stated my method of operating is as follows: The patient is placed in hospital a few days before operation that she may become familiar with nurse and room, and that I may examine the urine, etc., except in cases requiring immediate operation. On the day before the operation the bowels are thoroughly evacuated with sulphate of magnesia, a vaginal douche of hot boric acid solution given and the abdomen carefully shaved and scrubbed with soap and water. A pad of moist bichloride gauze—1 to 2,000—is pinned on the abdomen and pubes. At 7:30 the next morning the rectum is irrigated as well as the vagina, the urine drawn and at 8 A.M., or as soon thereafter as possible, the patient is anæsthetized with chloroform unless ether is specially indicated; operations made early in the day have given me less trouble than those made after noon. When complete unconsciousness is obtained, the dressings are removed and the abdomen once more scrubbed with soap and water, dried, washed with ether, dried and finally washed with bi-chloride solution, 1 to 1,000. If the operating room be such that a temperature of 98° F. can be maintained towels wrung out of hot bichloride solutions are placed around the field of operation; but if the room be chilly or likely to become so, dry towels are employed instead, pinned into place at the corners. A clean cut is made through the rectus muscle as I believe that the line of healing will be more firm than if the cut be made in the non-vascular linea alba. All bleeding is arrested by artery forceps, the peritoneum caught up with catch-forceps and nicked, blunt-pointed scissors introduced and the opening enlarged to the required extent. As to the pedicle: I am now using a large cat-gut ligature, as I have seen a number of very bad results, including a fearful case of fæcal fistula, abscess, etc., following the use of silk; if properly tied I do not think there is any more danger with a catgut than with a silk or hemp ligature and it is so easily rendered aseptic and so quickly absorbed as to be the ideal substance for such work. As to the question of drainage: in simple ovariotomy none is necessary. If there have been extensive adhesions and much hæmorrhage, if there have been purulent accumulations with contamination of the peritoneum or if there has been any other necessity for irrigating I insert a drainage-tube of glass, or pack with iodoform gauze: but whenever possible drainage is to be avoided and in most cases it can be if sufficient care be exercised; I have noticed that my cases without drainage have done much better than those with, but this may possibly be due to the fact that I have only been compelled to use drainage in my worst cases. In closing the abdominal wound, if time permits I sew up the peritoneum with a fine, continuous, cat-gut suture, dust in some aristol or iodoform and then put in heavy catgut sutures through skin, fat, fascia and muscles down to, but not through, the peritoneum. In my last eight cases I have used silk but once in closing the abdominal wound. Iodoform is then dusted freely on, several pieces of bichloride gauze, "fluffed up," applied over the abdomen, a thin layer of cotton and the whole fastened by strips of surgeon's plaster, occasionally a T bandage. In experimental work on dogs I have always used the collodion dressing no matter how large the cut, and with the greatest satisfaction, but I have never tried it in the human subject. The patient is allowed to be up after the tenth day but wears a bandage around the abdomen until the fifteenth or twentieth day. The bowels are moved on the third day with salines; no morphine is given if possible. This, I believe, covers my mode of conducting an abdominal section so far as the questions raised in the paper are concerned.

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SATURDAY, APRIL 16, 1892.

MILK FROM TUBERCULOUS COWS.

Anything from the pen of DR. E. F. BRUSH relating to the subject of tuberculous cattle is read with interest and profit. In the initial number of the *Practitioner's Monthly*, March, 1892, he discusses the question, "When does the milk of a tuberculous cow become dangerous as an article of food?"

According to DR. BRUSH, chronic tuberculosis is much more common in cattle than is generally thought, but the acute variety is admittedly rare. The existence of long-continued tuberculosis in the cow, without detriment to the general health of the animal, and without the supervention of septicæmia, is ingeniously explained in this way: The normal temperature of the healthy cow is 102.5°, about the same as the average temperature resulting from tuberculosis in man. This temperature frequently is not increased in the cow by the presence of chronic tuberculous disease. The animal, therefore, is not called upon to suffer the effects of long-continued elevation of temperature, and is consequently saved the strain which long-continued fever produces. Its tissues are not weakened, its resisting powers are not diminished, the tubercles do not break down. "Therefore, in order that a cow may develop the tuberculosis that kills, some other morbid agency (traumatism, puerperal septicæmia, etc.) must supervene, to set up the breaking-down process in the tubercle."

When acute miliary tuberculosis occurs in a cow, the milk secretion very soon ceases, so that actual danger to milk from this source is very slight. On the other hand, chronic tuberculosis is so widely distributed among dairy cattle, that probably no milk that reaches cities is free from admixture with milk from tuberculous animals. This does not imply, however, that it contains the bacillus of tuberculosis. It has been well established that much of the milk from tuberculous cows is free from this germ, while in the milk from other tuberculous cows, even some free from tuberculosis of the udder, the bacillus tuberculosis has been found. Nevertheless, as DR. BRUSH suggests, the question should be made to read, "When is the human subject fit to take milk from tuberculous cows, with impunity?" The difficulties in the way of a satisfactory answer to such a question are apparent. Fortunately, the great majority of people are not susceptible to tuberculosis. But the great number of cases of abdominal tuberculosis in children is a fair indication that the food is an important element in the propagation of the disease. It may be, in general, admitted that individuals who are susceptible to tuberculosis, either because of heredity or of the existence of conditions which have lowered the general strength, or, in the language of the older writers, "impaired the constitution," are hardly fit subjects for the use of milk from tuberculous cows.

DR. BRUSH pleads for a wider general knowledge of cows on the part of the profession, and for education of the laity on the subject, so that the propagating of cattle from non-tuberculous parents may be more generally employed. Believing as he does, that human tuberculosis is maintained by the domestic cattle in our midst, he sees as the only solution of the question, the stamping out of tuberculosis in cattle by proper breeding.

CASTRATION RECOMMENDED AS A SUBSTITUTE FOR CAPITAL PUNISHMENT.

DR. W. A. HAMMOND has addressed the New York Society of Medical Jurisprudence, at its last regular meeting, on the advantages of castration as a punishment for murder. As reported in the *Medical News*, April 2, DR. HAMMOND restricts the scope of his suggestion to the male sex. "Women have become so accustomed to the removal of the ovaries, and these organs are so much less essential to womanhood than the testicles are to manhood, that it might be necessary to substitute imprisonment for life in their case." Female murderers are far less numerous than the males, so that this consideration is not of great moment.

DR. HAMMOND seems to be serious in the matter, but he is not sanguine that the measure will be adopted in the lifetime of any of his hearers. For as it took many hundreds of years to abolish torture, and other inhumanities on the part of temporal and ecclesiastical powers, so it may take a long agitation before modern society can consent to his amendment. It is evident that neither capital punishment nor life-imprisonment have that amount of deterrent influence over the criminal class that could be desired, and DR. HAMMOND argues that castration would be more effective than either of the older methods. He quotes a French writer who has said that the dignity of a man resides in his testicles, and also the three negroes, castrated in Missouri as a punishment for rape, that capital punishment would have been their preference. Many a criminal has told Dr. Hammond, he says, that they would rather hang than lose the organs in question. Juries would feel less squeamish about decreeing guilt, in cases of doubtful testimony, if life-taking were not one of the consequences of finding a man guilty. The punishment would be continuous, and not momentary and intense, and in the continuance of a punitive award will be found its greatest effect. Castration changes the whole relations of the man; and while the brand upon him would be as bad as, or worse than, the mark upon Cain, he would be removed from many criminal tendencies. He cannot open his mouth without exposing what has happened to him; his facial expression becomes altered; he becomes effeminate and cowardly. He loses his appetite for alcoholic drink. In the case of a man who mutilated himself while delirious from alcohol, this act was the means of his reformation.

Criminals thus changed might in many instances, be made useful to society—much more so than dead men, even if it be the law that slays them. They could be made members of church-choirs, the vocal qualifications of eunuchs are well-known—safe type-writers, dry-nurses, laundry men, policemen, sailors, soldiers, legislators, reporters for mild society newspapers, and other places where originality and "dash" are not requisite.

The brutality of animal nature is reduced by emasculation, Dr. Hammond continues to argue. The fierce ram becomes mild, and the night-roving tom-cat ceases his pugnacious raids. The eunuchs of the Orient are described by travelers as a mild and obedient type of persons, generally trustworthy and fond of the care of young children.

As a means of stopping the propagation of criminals, this form of punishment would be no less effective than hanging. If it had been employed for the last few hundred years the number of criminal acts would have been many thousands less by this time, and the administration of justice would now have become much simpler and less expensive.

In the discussion following the paper, it was stated that more proof is needed to show that castrated males are not liable to commit acts of violence, and even murder. Many crimes are reported as having been perpetrated in the harems of the Orient, and it cannot always be shown that the eunuchs are guiltless. They have a not very enviable reputation in the matter of low cunning, conspiracy and greed, with their usual concomitant traits. Dr. Hammond has limited his present study or discourse to the crime of murder, incidentally referring to the minor blemishes of rape, wife-beating, alcoholism and suicidal proclivities. There is a class of despicable male creatures, in our cities, who prey upon and deprave women, and afterwards beat them, for whom this punitive measure would be admirably adapted to begin experiments with. If it worked well with them, it might be carried upwards into higher walks of vice.

THE TREATMENT OF DISEASE BY LEGISLATORS.

A resolution has been introduced in the Senate, authorizing the President to appoint a commission of three persons, two of whom shall be physicians, whose duty it shall be to select a site for the establishment of a national sanitarium for the treatment of pulmonary diseases. This sanitarium must be located in one of the Territories of the United States, and upon unoccupied public lands, and the commission is to report within six months after its appointment.

The spirit which dictated the resolution is to be commended, the intentions are evidently good but sadly misdirected.

While the medical profession is working hard to determine the best climatic conditions for the various phases of pulmonary tuberculosis, and finds itself almost appalled at the magnitude of the task, a worthy legislator proposes to cut the Gordian knot and have two physicians settle the matter, and settle it in six months. From the compensation allowed, ten dollars a day, while actually employed in the work, it is hardly possible that the President will be able to obtain the services of very eminent men.

However, the commission would be assisted very materially by the resolution itself. They need not consider at all the conflicting claims of Southern California and Colorado, or the various advantages of the Adirondacks, Asheville, or Florida, because the sanitarium must be located in one of the Territories. They have no need to study the influence [illegible] sea air upon pulmonary disease, because none of the Territories touch the ocean. Thus many of the most difficult phases of the question which the profession at large has met with have been settled by legislation.

We do not wish to be captious with regard to this innocent resolution, from which at least no harm can come, but merely to use it to illustrate how necessarily shallow all professional propositions must be which have their origin outside the profession. True of all professions, it is particularly so of medicine.

That there must be sanitary legislation goes without saying, but it should have its origin in the medical profession, and if the Government had an official sanitary department which could be looked to for assistance in such matters, such absurd legislation as this resolution would not disgrace our records. How ridiculous it would be for a convention of physicians to attempt legislation to meet the needs of the legal profession is apparent to every lawyer, but it is to be feared that the average legal legislator is not fully aware of the equal force of the converse proposition.

ıce is but another indication of the ne-
ɜ appointment of a National Secretary
u, h a seat in the President's cabinet.

EDICAL ASSOCIATION.—HOTELS FOR
'HE DETROIT MEETING.

ıg are the hotels and their rates for
e meeting of the American Medical
n:

$3 per day and upward.
$3 per day and upward.
e, $2 and $2.50 per day.
tel, $2 and $3.50 per day.
swold House, $2 per day.
tel Tacoma, $1.50 per day.
ffin House, $2 per day.
ıs Avenue Hotel, $1.50 per day.
tel Renand, $1.50 per day.
ɜen Elizabeth Hotel, $1.50 per day.
.e's Hotel, $1.25 per day.
tel Goodman, $1 per day.

ıe local Committee on Hotels, etc., will also be
to furnish members with the addresses of good
ding houses. For any further information ad-
s W. G. Henry, M.D., Chairman Committee on
ɜls, etc., 68 Lafayette Avenue, Detroit, Mich.

ɪE following decision by the Supreme Court of
ıois in the case of The North Chicago Street
.way Co. vs. James W. Cotton, is of interest:

'IDENCE.—*To show payment and reasonableness of physi-*
s bill.—Where the plaintiff in an action to recover dam-
for a personal injury, alleges that he was compelled to,
did pay out and expend large sums of money in and
ıt being cured of his injuries, it will not be sufficient for
to prove merely that he has paid a certain physician's
in order to its recovery, but he must also show that by
on of his injuries he has necessarily incurred such bill
that it is reasonable.

ıMAGES.—*Right to recover for medical services.*—In such case
court, on specific objection, may, before admitting proof
he plaintiff's liability incurred in curing himself and its
ıunt and reasonableness, require an assurance from
ısel that he will follow up the evidence by proof of pay-
ıt. On failure to prove that such a bill has been paid,
ɜndant should move to exclude all evidence in relation
he physician's bill, or ask the court to instruct the jury
lisregard it.

ııYSICIAN.—*Proof of his license—Right to receive payment for*
ices.—Where the question of a physician's qualifications
right to practice in his profession arises only collater-
', proof that he has practiced medicine in the State for a
g time will show *prima facie* that he was lawfully enti-
l to practice. But if he were to sue to recover for pro-
ıional services, he would doubtless have to show affirma-
ɜly his compliance with the law regulating the practice
nedicine.

SELECTIONS.

ıOME RECENT VIEWS ON LUPUS.—While the consensus of
nion is almost unanimous in favor of the tuberculous na-
e of lupus, there still remain many standpoints from
ich medical thinkers look upon the disease, and it is al-
ys interesting, and often profitable, to note their views.

n a discussion of lupus which took place at the annual
eting of the British Medical Association, Dr. Payne draws
ention to certain points which still admit of controversy.
.upus has occasionally been attributed to traumatism,
t in such instances there must either have been something
normal in the tissues of the patient, or some specific infection is introduced into the wound. Everything points to a specific irritant, and the structure of the growth warrants the same conclusion. The history of the disease, both clinical and pathological, the speaker thought, would show that there must be a persistent, and therefore a living, irritant which keeps up the granulation growth.

No point has been more debated than that of the relationship which lupus bears to tuberculous or scrofulous disease in the same subject. In the experience of Dr Payne, while the majority of lupus patients are healthy in other respects, about one in four present some other manifestation of tubercle, such as joint disease, phthisis, or scrofulous glands.

Although this proportion is much larger than that given by most observers, it does not have such a great bearing on the question after all, for we can conceive it quite possible for one organ or region of the body to be effected and other organs escape. In regard to family history, the speaker goes on to say that he has found an even greater proportion of tuberculous affections, and finds that they are indeed more frequent in the parents or relatives than in the patients themselves. If this personal experience can be established as a general principle, it would lead to the suggestion that lupus is often a manifestation of hereditary tuberculosis. In this connection it is interesting to note Baumgarten's recently advanced view, that the bacillus may be directly inherited, like the virus of syphilis, from one or the other parent. Drysdale believes that this theory is tenable for a certain number of cases of lupus, while several gentlemen who took part in the discussion of Dr. Payne's paper, including T. Calcott Fox, agreed that a family history of tuberculosis was especially frequent in lupus cases.

It is generally stated, however, that lupus itself never occurs in two successive generations; but this is evidently an erroneous statement, for the author has himself seen it in parent and offspring. Another instance, where instead of "never" one should substitute "hardly ever," is in Mr. Hutchinson's statement that lupus never gives rise to infective gland disease, since Leloir has found that adenopathies frequently occupy the lymphatic structures leading from the lupus, and Fox states that lupus can undoubtedly secondarily infect the related glands and lymphatics, and, after long years, the viscera.

That infection may take place in the opposite direction would also appear probable from the author's experience as well as that of Radcliffe Crocker, though the bacillary growth of scrofulous glands usually dies off when it reaches the surface, and only exceptionally extends along the skin in the clinical form of lupus. The experience of a number of gentlemen present was to the effect that the association of lupus with other tuberculous lesions was not the rarity which it was usually believed to be, but was on the contrary not infrequent. Fox has shown by the statistics of eighty hospital cases of true lupus, that scrofulous or tuberculous lesions of the skin, bones, glands, or joints were frequent complications.

Lupus differs from other forms of tuberculous disease in its slow and chronic process, its feeble infectivity, and the paucity of bacilli usually found; and the author attributes these characteristics, in a measure at least, to the comparatively low temperature of the skin, which offers an unfavorable condition for the development of the bacilli, being about twenty degrees lower than that presented by internal organs. The author sees no reason for making any broad distinction between lupus and inoculated traumatic tuberculosis; while Pye-Smith still believes in such a distinction, though admitting the same bacillary origin for both. Fox points to the failure of attempts to reproduce lupus as a weak spot in the argument, but it must be borne in mind that Mr. Eve has by *inoculation of lupus tissue in a rabbit's* ear produced what was apparently a true lupus differing from inoculated tubercle. It will thus be seen that, while more is known about the nature of lupus than formerly, there are many points on which observers still differ; but as more attention is being paid at the present time to tuberculous diseases in general than probably ever before, it is more than likely that some of these at least will soon be definitely settled.—*Medical Record.*

A doctor in Bootle, England, has the following printed on his prescription blanks: Gratefulness of the patient is part of his disease, is most prominent when the fever is highest, lessens during convalesence, and disappears as health is re-established. Hence, prescriptions only for cash.—*Memphis Medical Monthly.*

Diagnosis of Bladder Tumors.—Dr. Guiard points out some features of hæmaturia which may aid in establishing the diagnosis without digital examination or exploratory incision. Prostatic tumors are scarcely ever accompanied by hæmaturia; renal tumors very generally are. Renal hæmorrhage is quite often only of short duration, small in amount, and recurs at long intervals. At times there is an alternation of clear and bloody urine in the same day, a condition never seen in hæmorrhage due to tumors in the bladder. Renal hæmorrhage gradually diminishes and finally disappears. The opposite is seen in bladder tumors. In washing out the bladder if the last drops consist of pure bright blood, it speaks for tumor of the bladder. Elongated clots, rarely found, are probably formed in the ureter, especially if pains like renal colic have preceded their discovery. Small blood cylinders may be casts of the efferent kidney tubes. Hypogastric palpation alone usually shows nothing, but after the bladder has been emptied Guyon's method of *ballottement* shows the smallest increase in the size of the bladder. By pressing the anterior hand deeply with successive aspirations, the extent and thickness of a bladder tumor can be appreciated.—*Archives Générale de Médecine.*

The Work-Variation of a Child's Hour of Study.—The investigation of this question, the results of which are published by Dr. Burgerstein, of Vienna, in a paper originally submitted to the Section on Infancy, Childhood and School Life, at the International Congress of Hygiene at London, in August last, was undertaken by him to determine the time during which a pupil should be kept at work continuously in one line of mental work. For this purpose two classes of girls and two classes of boys were selected; in all 162 children of from eleven to thirteen years of age. These children were kept at work upon simple mathematical problems (addition and multiplication) for one hour, the hour being divided into four periods of ten minutes each, with five-minute intervals of rest.

During the whole period these 162 pupils worked out 135,019 figures, making 6,504 mistakes. It was found that the total number of calculations made by all the children increased, roughly speaking, 4,000, 3,000 and 4,000 in the different periods. During the third period of work, the increase of work done was not so great as during the other periods. The number of mistakes also increased 450,700 and 350 in the different periods. Here again, during the third period, the quality of the work was at its lowest. From this experiment it would appear that children of the ages stated become fatigued in three-quarters of an hour; that the power of work gradually diminishes to a certain point during the third quarter of the hour, returning with renewed force in the fourth quarter. The author concludes that continuous work for children of these ages, even though the tasks are not difficult, should not last longer than three-quarters of an hour.

Secretary of Public Health.—Repeated efforts have been made in past years to organize a Department of Public Health in the National Government, and place it on the same footing as the other departments, with its chief or secretary, who would be a member of the President's Cabinet. The American Medical Association has taken the matter in hand and has sent broadcast throughout the land a petition to Congress which it asks the profession to endorse, and exert itself to have granted. Among the many advantages which would accrue from the establishment of such a department, the committee of the association believes that its secretary would "become one to whom we could look for the exploitation of measures that will direct continuous scientific and collective investigation in regard to endemic, contagious, and other diseases; the enlightenment of the people in sanitary ways of living; the dissemination of information respecting the most favorable places of residence for those afflicted with such chronic diseases as asthma, rheumatism, neuralgia, and consumption; the examination of food and drinks; medicinal springs; the collection and tabulation of vital statistics at large and in various localities, such as the congested areas of our great cities and among various races. He would be able to coöperate with State Boards of Health, the Signal Service, the medical departments of the army, navy, and marine service, unify and utilize their work, and thus make the Department of Public Health the repository of the most important facts that concern the comfort of the people; and his duties will grow broader and stronger in adaptability to public needs."

The measure is one which will doubtless receive the cordial endorsement of every medical man in the country. Much may be accomplished by the individual efforts of physicians in commending the subject to Congressmen and Senators with whom they may be acquainted or come in contact.—*Brooklyn Medical Journal.*

On the Lying-in Decubitis.—The dorsal position so constantly observed for several days after labor I hold to be a mistake, for the following reasons:—

First, the soft and enlarged uterus (more especially when compressed by a tight binder drawn by all the force available of either nurse or doctor) must gravitate backwards and so favor the retention of the secretions instead of getting rid of them.

Secondly, in any case where a breach of surface exists (and which must have taken place unobserved during the process of labor) the dorsal position, by retaining the discharges longer in contact with the most likely surfaces to be torn, viz., cervix uteri or perineum, may lead to septic absorption, and it is as well to bear this in mind before waiting for such symptoms to develop. And by changing the decubitus on the back (so often assumed by the patient herself, or advised by the nurse) to the lateral or preferably the semi-prone position, the secretions will be much more likely to leave the body more quickly, and thus not be liable to be absorbed by any torn surface, perineum, etc., which may chance to exist. It is often a matter for surprise to observe the quantity of fluid held by the vagina (after syringing, for instance, when lying down). And when such fluid is of an abnormal character how important it is for the attendant to favor its exit by every means in his power. Another disadvantage of the dorsal position is that a quantity of lochial discharge collects in utero, and is liable to find its way into the patulous openings of the Fallopian tubes. The semi-recumbent position on the hip I have found useful, or the sitting posture for a few moments when the first twenty-four hours have passed, and I have remarked when this is done the process of involution proceeds more rapidly, the peristaltic action of the bowels becomes sooner reëstablished, and the lochial discharge ceases at an earlier date. I consider that if every lying-in patient were to adopt the prone position *directly after the birth of the child*, the expulsion of the placenta would be hastened, and very probably its expression by hand seldom required. This would be in itself, in my opinion, a great advantage if we consider the squeezing and violent pressure backwards the uterus has to sustain during the process of "expression," frequently followed by the application of a tight binder. Is it any wonder then that retroversion of the uterus has been traced (in some cases at least) to the aforesaid practice, combined with the mischievous habit of enforcing the dorsal position in addition on the lying-in patient for weeks after delivery, with the plausible idea of assisting the process of involution and preserving the patient's figure, when it was far more likely to produce an opposite effect. By changing the position each day as I suggest, more perfect drainage of the parturient canal will be effected, and the uterus return to its normal size and position more rapidly. I trust, therefore, that a trial will be made of my suggestions by obstetricians if only for the reasons given.—*Medical Press.*

Hare (H.A.) on the Treatment of Anæmia by Copper and Arsenic.—After the digestive tube has been treated by the remedies ordinarily used to regulate its action, the arsenite of copper has an opportunity to perform a double duty. Acting as does arsenic as a stimulant to mucous membranes all over the body, in addition to its stimulant influence on nutrition, it tends to prevent disorders of the digestive mucous membrane, and so renders perfect secretion and absorption possible, preventing the auto-intoxication of the patient from the fermentation and decomposition changes in the contents of the stomach and bowel. Happily joined to this, the copper adds tone to the system, and promotes assimilation and the production of muscular tissue.

Acting in the belief that arsenite of copper would form a useful combination in the treatment of anæmia and debility, the writer has tried it in a number of cases with very encouraging results. Under these circumstances the digestion improves, the color becomes more like the normal, and, either by a direct effect on nutrition or on digestion or on both, the patients progressed rapidly towards health, provided, of course, that the anæmia was functional and not organic in origin. In the dose of one-fiftieth, or one-twenty-fifth of a grain, arsenite of copper will, I think, often prove of service, if given three times a day after meals, and from its combination may prove to be superior to Fowler's solution not only in anæmia but also in chorea and similar nervous ailments.—*Therapeutic Gazette.*

Infection and Immunity.—Dr. A. C. Abbott in *The Practitioner* says:

Of the hypotheses that exist for the explanation of immunity, that which assumes acquired immunity to be due to reactive changes on the part of the tissues has received the greatest support.

Immunity is most frequently seen to follow the introduction into the body of the products of growth of bacteria that in some way or other have been modified. This modification may be artificially produced from the products of virulent organisms and then introduced into the tissues of the animal; or the organisms themselves may be so treated that they are no longer virulent, so that when introduced into the body of the animal they eliminate poisons of a much less vigorous nature than is the case when they possess their full virulence.

Immunity following the introduction of bacterial products into the tissues is not the result of the permanent presence of these substances *per se* in the tissues, or to a tolerance acquired by the tissues to the poison, but is probably due to the formation in the tissues of another body that acts as an antidote to the poisonous substance.

This protective proteid that is eliminated by the cells of the tissues need not of necessity be antagonistic to the life of the organisms themselves, but in some cases must be looked upon more as an antidote to their poisonous products.

In the serum of the normal circulating blood of many animals there exists a body that is capable, outside of the body, of rendering inert bacteria that, if introduced into the body of the animal, would prove infective.

In many instances infection may be looked upon as a contest between the bacteria and the tissues, carried on on the part of the former by the aid of the poisonous products of their growth, and resisted by the latter through the agency of the proteid bodies normally present in their integral cells.

When infection occurs it may be explained either by the excess of vigor of the bacterial products over the antidotal or protective proteids eliminated by the tissues, or to some cause that has interfered with the normal activity and production of these bodies by the tissues.

Phagocytosis, though frequently seen, is not essential to the existence of immunity, but is more probably a secondary process; the bacteria being taken up by the leucocytes only after having been rendered inert through the normal germicidal activity of the serum of the blood and other fluids of the body.

Diagnosis of Pregnancy in Early Months.—Dr. Chas. Jewett (*Brooklyn Medical Journal*) says:

The diagnosis of pregnancy in the early months rests upon no one sign, but upon the collective evidence of all the signs.

The most reliable evidence of normal gestation in the first three months is to be found in the changes which take place in the uterine tumor.

In the great majority of all cases of normal pregnancy the signs of the second month are sufficient to establish the diagnosis.

In the absence of pelvic diseases, pregnancy may be positively predicted in every case of utero-gestation between the eighth and the twelfth week, often at an earlier period.

A ruptured tubal pregnancy, with slight hæmorrhage, may pass unrecognized, usually being followed by recovery.

In ruptured tubal pregnancy, with free hæmorrhage, the clinical picture is unmistakable.

While the diagnosis is more difficult in ectopic than in normal pregnancy, it is possible in a large percentage of cases.

Three Signs of Pregnancy.—Dr. A. J. C. Skene (*Brooklyn Medical Journal*) says:

First, in addition to the elasticity or softening of the uterus and its change of form, there comes with that a difficulty of mapping out the uterus. It is exceedingly difficult to outline it in some cases, and that very fact is of great value, because anything else which is likely to simulate pregnancy is more clearly defined because denser, as a uterine fibroid, subinvolution, a distended Fallopian tube or an ovarian cyst, for instance. More than that, in the early months of pregnancy the uterus grows out of proportion to its surroundings, and so its mobility, or the facility with which it can be displaced, is lessened. You will find it is more difficult to raise a pregnant uterus up out of the pelvis or toward the superior strait than in any other condition—than in cases of most, not all, small fibroids which enlarge the uterus, or subinvolution, which does the same thing. This partial fixation is rapidly overcome in the latter months of pregnancy, especially after the third month, when the function of development of the uterine ligaments is taken up and goes on rapidly.

The second sign which I would mention is the color of the mucous membrane of pregnancy, which is different from everything else—nothing simulates it. It is present in a less degree in ectopic gestation, but in normal gestation this color of the mucous membrane is not simulated by any marked condition that I know of. That peculiar bluish-violet hue, if seen a few times, is easily recognized afterwards, and becomes of the greatest possible value, and I depend very largely upon it. Of course it requires a careful speculum examination in order to see it, but it is worth the trouble in doubtful cases.

The third sign is the peculiar secretion in the cervix. There is a difference between the secretion in the cervix of the pregnant uterus and that of any other pathological condition. In the pregnant uterus the cervical secretion has a whitish, opaque appearance, that at first sight is very much like the leucorrhœal discharge in a case of muco-purulent cervical endometritis, but careful examination proves that it is not, because it contains pus, which gives the opaque appearance, while in pregnancy opacity is due to the coagulation of the albumen by the secretions of the vagina. That is characteristic of pregnancy, and occurs in no pathological condition, and is almost always present. When I find that opaque secretion of the cervix, that peculiar hue of the cervix and vagina, and the other physical signs, I am more positive of the diagnosis in the early months of pregnancy than in the fourth or fifth month, when fœtal motion is present, but, on account of a fatty abdomen, is hard to distinguish.—*American Lancet.*

An Unusual Intestinal Concretion.—A case of a large concretion having become lodged in the cæcum, has just been recorded by a French practitioner. The patient, a woman, had for a long time suffered from chronic intestinal catarrh, and after death the cæcum was found to be occupied with a large greyish mass, which readily broke down under pressure. On further examination the mass was found to consist of 85 per cent. of subnitrate of bismuth, together with 15 per cent. of organic matter. The presence of the bismuth salt was easily explained by the fact that the patient had, for a long time before her death, been accustomed to take large quantities of it.—*Medical Press.*

Michael Smith, of Iowa, his wife and eight children, were poisoned by eating beef affected with lumpy jaw. The mother and one boy are still very sick and may die, but the others are out of danger.

Uterine Drainage.—Dr. W. Gill Wylie says (*Ann. Gyn. and Ped.*), that to sum up: if a patient comes to you, try, if possible, to make a complete diagnosis; differentiate the cases which are complicated by diseases of the tubes and ovaries from those which are not; if there is no disease of the appendages, you will be justified in using clean instruments, clean hands, and having the vagina clean, in examining the uterus with a sound. If the touch of the sound causes bleeding or pain, or if the uterus is enlarged, and remains enlarged after boro-glyceride treatment and improved pelvic circulation, then divulse, scrape, drain, and make a simple application. Never use anything which is really destructive of the mucous membrane, or which will leave a scar. Recollect that the uterus is filled with glands and follicles, which are deep-seated in its tissues, so that any escharotic, any caustic, any electric current, which may cause destruction of the mucous membrane, will leave a scar, and do more harm, in the course of time, than good. Although you may cure the acute symptoms by burning out the uterine cavity, yet the after-results from stopping up the mouths of the glands and follicles will do more harm than any possible good. But if you will treat the chronically diseased uterus as you would treat a sinus, and keep up drainage, you will get satisfactory results.

Patent Medicines and the Lay "Press."—At the annual meeting of the Canadian Press Association, held in Ottawa, March 3 and 4, Dr. Playter brought before the meeting the subject of patent medicines and cure-all advertisements. Why, the doctor said, should the general press insert such advertisements any more than the medical press? Patent medicines did an incalculable amount of harm, promoted intemperance and disease, misleading the people until it was too late in many instances, disease having progressed too far for medical skill to apply successful remedies. The most excruciating of all pains, especially to most readers of papers, was "Paine's Celery Compound." The press was a powerful educator, a great power for good or for ill. The time would surely come when this practice of the press would be abandoned. Dr. Playter asked for a committee to be appointed by the President to report on the subject at the next meeting of the Association. The President referred the question to the Executive Committee, and said the Association would be glad to have a paper on the subject from the doctor at the next meeting. Dr. Playter intends to give a paper on it, and to press for more discrimination in regard to the advertising of such nostrums.—*The Canadian Practitioner.*

Darwinism so far a Failure.—Darwinism has a strong foe in Professor Virchow. The following is an extract from his address on the subject delivered before the Anthropological Congress in Vienna: "Since the Darwinian theory of the origin of man made its first victorious mark, twenty years ago, we have sought for the intermediate stages which were supposed to connect man with the ape. The proto-man, the *pro-anthropos*, is not yet discovered. For anthropological science the *pro-anthropos* is even a subject of discussion. At that time in Innspruck the prospect was, apparently, that the course of descent from ape to man would be reconstructed all at once; but now we cannot even prove the descent of the separate races from one another. At this moment we are able to say that among the peoples of antiquity, no single one was any nearer to the apes than we are. At this moment I can affirm that there is not upon earth any absolutely unknown race of men. The least known of all are the peoples of the central mountainous districts of the Malay Peninsula, but otherwise we know the people of Terra del Fuego quite as well as the Esquimaux, Bashkirs, Polynesians and Lapps. Nay, we know more of many of these races than we do of certain European tribes; I need only mention the Albanians. Every living race is still human; no single one has yet been found that we can designate as simian or quasi-simian. Even when in certain ones phenomena appear which are characteristic of the apes—*e. g.*, the peculiar ape-like projections of the skull in certain races—still we cannot say that these men are ape-like."—*The Sanitarian.*

The cultivation of the erythroxylon coca has been introduced into Hindostan. It grows like a weed in Madras, and the leaves are said to yield a cocaine fully equal to that obtained from the American coc e *Canadian tioner.*

The War Against Quackery lle
being vigorously pursued by t
through its able secretary. Sc
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To Dissolve Cocaine.—Squibb recommends the use of a half of 1 per cent. solution of boric acid to dissolve cocaine, this amount being needed to prevent decomposition.

Prof. Parvin does not believe that properly applied *pessaries* ever produce cancer. If cancer does follow the use of them, *they* are not the cause of the disease, but the condition must have already existed in the patient.—*Canada Lancet.*

Salicylate of Soda in Gonorrhœal Inflammation about the Neck of the Bladder.—Dr. Meynier has found the drug to be of notable value in these cases, given in hourly doses, amounting at first to a daily dose of 6 grams, if needful increased to 10 grams daily. Commonly symptoms abate after the second day; and when good result follows, the dose must be gradually decreased till 3 grams daily are given; this dose is continued till risk of recurrence seems gone. The drug fails in relieving the same affection in its chronic stage.—*Archives de Méd. Militaire.*

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"He began his professional life with no adventitious aids; yet by incessant industry, indomitable perseverance, and singleness of purpose, he attained to its highest rank. No temptation distracted his attention from the goal of his life; neither extraneous science, nor general literature, nor the allurements of art, nor the pleasures of society.

"The undivided strength of his mind and his affections was devoted to enlarging the domain of surgery, not only in its operative methods—which he always subordinated to the welfare of his patients—but also in preparing for his profession a literary monument that might speak for him when his voice should be no longer heard.

"His minute acquaintance with anatomy, and his ambipregnancy, especially after the third month, when the function of development of the uterine ligaments is taken up and goes on rapidly.

The second sign which I would mention is the color of the mucous membrane of pregnancy, which is different from everything else—nothing simulates it. It is present in a less degree in ectopic gestation, but in normal gestation this color of the mucous membrane is not simulated by any marked condition that I know of. That peculiar bluish-violet hue, if seen a few times, is easily recognized afterwards, and becomes of the greatest possible value, and I depend very largely upon it. Of course it requires a careful speculum examination in order to see it, but it is worth the trouble in doubtful cases.

The third sign is the peculiar secretion in the cervix. There is a difference between the secretion in the cervix of the pregnant uterus and that of any other pathological condition. In the pregnant uterus the cervical secretion has a whitish, opaque appearance, that at first sight is very much like the leucorrhœal discharge in a case of muco-purulent cervical endometritis, but careful examination proves that it is not, because it contains pus, which gives the opaque appearance, while in pregnancy opacity is due to the coagulation of the albumen by the secretions of the vagina. That is characteristic of pregnancy, and occurs in no pathological condition, and is almost always present. When I find that opaque secretion of the cervix, that peculiar hue of the cervix and vagina, and the other physical signs, I am more positive of the diagnosis in the early months of pregnancy than in the fourth or fifth month, when fœtal motion is present, but, on account of a fatty abdomen, is hard to distinguish.—*American Lancet.*

An Unusual Intestinal Concretion.—A case of a large concretion having become lodged in the cæcum, has just been recorded by a French practitioner. The patient, a woman, had for a long time suffered from chronic intestinal catarrh, and after death the cæcum was found to be occupied with a large greyish mass, which readily broke down under pressure. On further examination the mass was found to consist of 85 per cent. of subnitrate of bismuth, together with 15 per cent. of organic matter. The presence of the bismuth salt was easily explained by the fact that the patient had, for a long time before her death, been accustomed to take large quantities of it.—*Medical Press.*

Michael Smith, of Iowa, his wife and eight children, were poisoned by eating beef affected with lumpy jaw. The mother and one boy are still very sick and may die, but the others are out of danger.

Uterine Drainage.—Dr. W. Gill Wylie says (*Ann. Gyn. and Ped.*), that to sum up: if a patient comes to you, try, if possible, to make a complete diagnosis; differentiate the cases which are complicated by diseases of the tubes and ovaries from those which are not; if there is no disease of the appendages, you will be justified in using clean instruments, clean hands, and having the vagina clean, in examining the uterus with a sound. If the touch of the sound causes bleeding or pain, or if the uterus is enlarged, and remains enlarged after boro-glyceride treatment and improved pelvic circulation, then divulse, scrape, drain, and make a simple application. Never use anything which is really destructive of the mucous membrane, or which will leave a scar. Recollect that the uterus is filled with glands and follicles, which are deep-seated in its tissues, so that any escharotic, any caustic, any electric current, which may cause destruction of the mucous membrane, will leave a scar, and do more harm, in the course of time, than good. Although you may cure the acute symptoms by burning out the uterine cavity, yet the after-results from stopping up the mouths of the glands and follicles will do more harm than any possible good. But if you will treat the chronically diseased uterus as you would treat a sinus, and keep up drainage, you will get satisfactory results.

Patent Medicines and the Lay "Press."—At the annual meeting of the Canadian Press Association, held in Ottawa, March 3 and 4, Dr. Playter brought before the meeting the subject of patent medicines and cure-all advertisements. Why, the doctor said, should the general press insert such advertisements any more than the medical press? Patent medicines did an incalculable amount of harm, promoted intemperance and disease, misleading the people until it was too late in many instances, disease having progressed too far for medical skill to apply successful remedies. The most excruciating of all pains, especially to most readers of papers, was "Paine's Celery Compound." The press was a powerful educator, a great power for good or for ill. The time would surely come when this practice of the press would be abandoned. Dr. Playter asked for a committee to be appointed by the President to report on the subject at the next meeting of the Association. The President referred the question to the Executive Committee, and said the Association would be glad to have a paper on the subject from the doctor at the next meeting. Dr. Playter intends to give a paper on it, and to press for more discrimination in regard to the advertising of such nostrums.—*The Canadian Practitioner.*

Darwinism so far a Failure.—Darwinism has a strong foe in Professor Virchow. The following is an extract from his address on the subject delivered before the Anthropological Congress in Vienna: "Since the Darwinian theory of the origin of man made its first victorious mark, twenty years ago, we have sought for the intermediate stages which were supposed to connect man with the ape. The proto-man, the *pro-anthropos*, is not yet discovered. For anthropological science the *pro-anthropos* is even a subject of discussion. At that time in Innspruck the prospect was, apparently, that the course of descent from ape to man would be reconstructed all at once; but now we cannot even prove the descent of the separate races from one another. At this moment we are able to say that among the peoples of antiquity, no single one was any nearer to the apes than we are. At this moment I can affirm that there is not upon earth any absolutely unknown race of men. The least known of all are the peoples of the central mountainous districts of the Malay Peninsula, but otherwise we know the people of Terra del Fuego quite as well as the Esquimaux, Bashkirs, Polynesians and Lapps. Nay, we know more of many of these races than we do of certain European tribes; I need only mention the Albanians. Every living race is still human; no single one has yet been found that we can designate as simian or quasi-simian. Even when in certain ones phenomena appear which are characteristic of the apes—*e. g.*, the peculiar ape-like projections of the skull in certain races—still we cannot say that these men are ape-like."—*The Sanitarian.*

The cultivation of the erythroxylon coca has been introduced into Hindostan. It grows like a weed in Madras, and the leaves are said to yield a cocaine fully equal to that obtained from the American coca.—*The Canadian Practitioner.*

The War Against Quackery, in Louisville, is just now being vigorously pursued by the State Board of Health through its able secretary. Some notorious quacks have been forced to quit the field, and it is only a question of time when the city, as well as the State, will be purged of these getters of money under false pretenses.—*Medical Record.*

To Dissolve Cocaine.—Squibb recommends the use of a half of 1 per cent. solution of boric acid to dissolve cocaine, this amount being needed to prevent decomposition.

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"His minute acquaintance with anatomy, and his ambidextrous skill, enabled him to perform, with ease to himself and safety to his patients, operations which less accomplished surgeons hesitated to undertake.

"He possessed a certain magnetism of manner, quite independent of formality, that evidently proceeded from the heart, and drew all hearts to himself. Never frivolous, but always cheerful, he was dignified, grave and earnest, making all who heard him as a teacher and speaker, or in familiar intercourse, recognize in him, above all other things, the upright man. For he possessed eloquence of conviction and the force of absolute honesty in all his statements, and thereby drew to himself, as enthusiastic admirers and disciples, the successive classes of students whom he taught.

"The College, desiring to show respect for the purity, uprightness, unselfishness and modesty of Dr. Agnew's character; its admiration for the noble example of his life; and its sense of the value of his contributions to the science and art of surgery, directs that this minute shall be duly recorded, and a copy of it, signed by the President and Secretary, be conveyed to Dr. Agnew's family. Also, that the College will attend the funeral in a body, and that the President be requested to appoint a Fellow to prepare a memoir of our late colleague."

CHARLES W. DULLES, M.D., Sec'y.

BOOK REVIEWS.

DISEASES OF THE BLADDER AND PROSTATE, by HAL. C. WYMAN, M. Sc., M.D., Professor of Surgery Michigan College of Medicine and Surgery, etc., etc. Detroit. 1891. George S. Davis. pp. 130, paper.

This little volume commences with an anatomical description of the bladder, and the methods of examination. Chapter two is devoted to a consideration of the prevention of shock during and after operations upon the bladder and prostate. Chapter three discusses deformities and wounds of the bladder. Chapter four, ruptures and tumors. Chapter five, neuralgia of the bladder. Chapter six treats of lithotrity and cystotomy. Chapter seven of acute and chronic cystitis. Chapter eight of calculi, and chapter nine of prostatic concretions. The book is carefully written, and well worth perusal.

SURGICAL ANATOMY FOR STUDENTS. By A. MARMADUKE SHIELD, M.B., F.R.C.S. 8 vo., cloth, pp. 226. New York: D. Appleton & Co. Chicago: A. C. McClurg & Company. Price $1.75.

"This work" as we are informed by our author, contains the substance of a series of demonstrations delivered by himself to students in course of preparation for final examinations. It is also intended to be used with the living model, and an inspection shows that it fairly meets the indication. There are no illustrations, but the author's directions are so clear that one can map out on the surface of the living model the exact location of the structures lying underneath.

There cannot be too many books on topographical anatomy, any more than there can be too much study of practical anatomy, and this book will therefore be a welcome addition to many shelves whereon there are already many anatomical works, but none written with more precision and accuracy.

MISCELLANY.

THE Hungarian State Health Commissioner in a report to the Minister of the Interior (Pharm. Post Vienna, Nov. 10, 1892) stated that in the treatment of influenza, no specific was known but each case required individual treatment. Concerning the use of antipyretics, such as antipyrine and phenacetine, it appeared that the latter especially gave good results, while a portion of the patients were favorably affected by salipyrine.

REGISTER BY MAIL. NOTICE TO ASSOCIATION MEMBERS AND DELEGATES.—The Registration Committee wishes to give notice to all who expect to attend the ensuing meeting at Detroit, that those who desire to do so can register by mail. The Committee will send to each member of the Association, within a short time, the proper blanks, and earnestly desires that as many members as possible will forward to the Committee their credentials and fees *in advance of the meeting*. By this means we expect to lessen very greatly the annoyance which the members always experience in waiting in a great crowd around the registration clerks. Those who register thus, by mail, will save themselves all delay and annoyance. Think it over, and when you receive your blanks, sit right down, fill them out, enclose your fee and send it right on to the Committee.

DAVID INGLIS, Chairman,
21 State St., Detroit, Mich.

NEW CHAIRS AND PROFESSORS AT THE JEFFERSON MEDICAL COLLEGE.—The Board of Trustees of the Jefferson Medical College, at their meeting April 7, 1892, instituted a Chair of Clinical Gynecology, with a seat in the Faculty, and elected to the new chair Dr. E. E. Montgomery, who has been for a number of years Professor of Gynecology in the Medico-Chirurgical College. They also established the following Clinical Professorships, electing Dr. F. X. Dercum, Professor of Nervous Diseases; Dr. E. E. Graham, Professor of Children's Diseases; Dr. H. Augustus Wilson, Professor of Orthopædic Surgery; Dr. H. W. Stelwagon, Professor of Dermatology; and Dr. W. M. L. Coplin, Adjunct Professor of Hygiene.

NEW YORK ACADEMY OF ANTHROPOLOGY, COLUMBUS MEMORIAL MEETING.—The members of the American Medical Association, with their ladies, are cordially invited to attend a meeting of this Academy at Columbia College, New York city, at eight o'clock P.M., on Tuesday, April 19, to celebrate the 400th Anniversary of the Great Historic Epoch in the life of Columbus—the treaty and capitulation of Ferdinand, Isabella and Columbus, of April 1492, which led to the discovery of America. General James Grant Wilson will deliver the address on Columbus, General Darling, of Utica, the address on Isabella and Will Carleton will read an original poem entitled "The Voyage of Columbus." Papers are expected from Spain and Portugal.

EDWARD C. MANN, M.D., F.S.S., President.

A GERMAN EDITION, of the second revision of Gower's book on the nervous system, has just been published by Cohen, of Bonn, and an Italian translation is nearly ready.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 2, 1892, to April 9, 1892.

Major Albert Hartsuff, Surgeon U. S. A., granted leave of absence for six months, to take effect on or about July 10, 1892, with permission to go beyond the sea, and to appl for an extension of two months.

First Lieut Alfred E. Bradley, Asst. Surgeon U. S. A., ordered to Columbus Bks., O., for temporary duty at that station, during the illness of Capt. Augustus A. De Loffre, Asst. Surgeon U. S. A.

First Lieut. William E. Purviance, Asst. Surgeon U. S. A. (recently appointed), will proceed from Rossville, Ill., to Ft. Riley, Kan., and report for duty at that station.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending April 9, 1892.

J. Mills Browne, reappointed Chief of Bureau and Surgeon-General, U. S. N.

J. C. Boyd, detailed as Assistant to the Bureau of Medicine and Surgery.

Asst. Surgeon M. W. Barnum, ordered to the Naval Hospital, Washington, D. C.

Surgeon Howard Smith, granted leave of absence for six months, with permission to leave the United States.

Champ Carter McCullough, commissioned an Asst. Surgeon in the Navy.

The Journal of the
American Medical Association

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ORIGINAL ARTICLES.

THE LEPROSY QUESTION.

Lecture delivered at the University of the South, November, 1891.

BY HENRY WM. BLANC, B.S., M.D.,

PROFESSOR OF MATERIA MEDICA, THERAPEUTICS, AND DERMATOLOGY, MEDICAL DEPARTMENT OF THE UNIVERSITY OF THE SOUTH, SEWANEE, TENNESSEE.

Leprosy is the oldest disease on record, dating back to the year 4200 B. C., when it was endemic in Egypt; and to this day the traveler in walking the streets of the smaller towns of that country is liable to be startled by the hoarse croaking of the blear-eyed, plague-stricken victim of the *baras*, as this malady is commonly called in the East. From Egypt the Jews brought the disease with them into Palestine, where Moses found it necessary to frame stringent laws relative to its diagnosis and prevention.

It is probable that under the generic term *leprosy*, the Law-giver described, besides the affection which we now know by that name, a number of other cutaneous diseases, notably leucoderma, the Aleppo evil, erysipelas and ringworm. Perhaps certain inflammations of the skin due to animal parasites, such as pediculosis and scabies, were also included under this title. The main object of the Levitical code was the prevention of contagion by isolating the diseased person and excluding him from the community, upon the assumption that the malady was communicable and a menace to all who touched the victim of the scourge, or who came in contact with anything that he had touched. In this way many who were not afflicted with true leprosy, but who had some cutaneous affection resembling it, were made to suffer exclusion and associate with the lepers until time should work sufficient change in their eruption to warrant the Levites in declaring them cleansed. The law being framed *pro bono publico*, it was deemed wiser that a few should be made to suffer the odium and discomfort of being considered unclean, than that the welfare of the many should be jeopardized by a case whose diagnosis was uncertain. The scriptural regulations relating to the prevention of leprosy have not been improved upon by sanitarians of the present day, and whether a community harboring this disease holds to the theory of heredity or contagion, but one plan has been found effective for checking its spread, and that is the plan of the ancient Hebrew: to isolate and segregate the lepers.

In the middle ages when the returning Crusaders brought into Europe this baneful disease, its rapid spread soon made it an imperative necessity for the safety of the people that lepers should be isolated. As a consequence benevolent societies were instituted for the purpose of collecting lepers and nursing them in buildings specially erected as lazarettos.

Notable among the organizations dedicated to this work were the order of Saint Lazarus, and the order of Knights Hospitallers. That these persons who devoted their lives to this purpose had much work to do can be imagined when we reflect that leprosy was very common in the thirteenth and fourteenth centuries, and that there were on the death of Louis VIII (1229), two thousand lazarettos in France alone, and nineteen thousand in Christendom.[1] Doubtless many of the cases confined in these hospitals were not leprosy at all, a large number being, perhaps, syphilis, a disease which, in many respects, resembles leprosy, and which, in the days before mercury was known to be a specific against it, very probably in many cases produced more pain and disfigurement, and killed its victims quicker than leprosy. But it is reasonable to conclude that the majority were *bonâ fide* cases of Oriental leprosy, and that the one hundred and twelve hospitals that existed in England between the years 1101 and 1472,[2] gave shelter to persons who suffered with the disease described in the thirteenth chapter of Leviticus. As a result of the beneficial effects of isolation these hospitals were reported to Henry VIII as *empty*, when that devout monarch was taking an inventory of church property for the purpose of appropriating the revenues to the uses of the crown.

In more recent times isolation has been practiced with varying degrees of success. In 1785 leprosy was "not an uncommon affliction in Louisiana," and a hospital was established in the suburbs of New Orleans by the governor, Estévan Miro. "In the course of a few years," says Gayarré, in his History of Louisiana, "the number of these patients gradually diminished, either by death or transportation, the disease disappeared almost entirely, the hospital went into decay, and Leper's Land remained for a considerable length of time a wild looking spot, covered with brambles, briers, weeds, and a luxurious growth of palmettoes."

In Tracadie, Nova Scotia, there were, in 1875, twenty lepers in the lazaretto, and sixteen outside, making a total of thirty-six, while in 1885, there were twenty-one lepers in the lazaretto and three outside, making a total of twenty-four,—a diminution of twelve cases in ten years. In 1889 there were eighteen lepers reported in all Tracadie.

In Norway, isolation of lepers has been practiced since 1856, when there were 2,871 recorded, in and out of the hospitals; in 1866 there were 2,717 lepers; in 1876, there were 2,059; and in 1882, there were 1,433, the figures showing that there were about one-half as many lepers in Norway in 1882 as there were in that country twenty-six years before.

It should be remembered that both in Nova Scotia and in Norway, the system of isolation has only been partially applied, and doubtless there were, in both places, even more lepers outside of the hospitals than have been recorded, as it is customary all over the world for well-to-do families to secrete, for obvious reasons, such of their members as are subject to this terrible affliction. In warmer climates efforts at segregation, though limiting the spread of the disease, have not brought such favorable results as those just noted, and in the Sandwich Islands where this has been practiced most actively of late years, so large a number of lepers have been allowed to remain out of the lazaretto that it would be unfair to give a judgment for or against the practice of isolation; but certain it is that in Louisiana,[3] since the abolition of Miro's lazar house, the disease has been slowly, but steadily increasing, until to-day the lepers of that State number from seventy-five to one hundred.

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[1] Leloir: Traité Pratique et Théorique de la Lèpre, 1886, p. 265.

[2] See Article by Dr. James Christie in McCall Anderson's Treatise on Diseases of the Skin, 1887.

Many attempts have been made to explain the origin of leprosy, and strong arguments have been brought forward to show that it is due to certain special causes or conditions, namely, that it is hereditary; that it is contagious; that it is due to a diet of fish, or salt meat, or raw meat, or putrid meat. Some hold that it is acquired by inoculation from the sores and ulcers of a leper; while others believe that certain animals act as intermediate hosts of the germs of the disease. With all of these conflicting views to confuse us in our search for the solution of the problem, the question still remains to be answered: *Is leprosy contagious?* To base our conclusions solely on the *opinion* of the majority of observers would probably not lead us much nearer to the truth, for the long incubation and slow evolution of this disease allow so many incidents to occur in the history of a single case that it is difficult for isolated observers to ascertain what is essential and what is accidental.

To prevent ourselves from drawing too hasty a conclusion as to the etiology of leprosy, we should bear in mind the experience of no less a body than the Royal College of Physicians, which declared in 1867, that leprosy was *not* contagious, basing its statement upon the opinions of the majority of medical men with whom it had been for several years in communication. Whether the "*patres conscripti* of English medicine," as they have been sarcastically styled,[4] were right or wrong in their conclusions, there can be less doubt as to the injudiciousness of their premature decision when we consider the loose and unscientific methods of investigation which they pursued.

The general belief of to-day, with a respectable minority holding contrary views, is that leprosy is contagious, or, to use a better and safer word, *communicable.*

In every country it has been a common experience to see the disease "run" in families, sometimes "to the third and fourth generation," and it has seemed idle not to suppose that whatever else it might be, it was certainly hereditary. But those who hold to this view are not as numerous to-day as they were ten or fifteen years ago, owing to the discovery of a factor which is destined to play a conspicuous part in the study of this disease—I mean the *bacillus lepræ.* This is a little, rod-like microörganism, about one five-thousandth of an inch in length, making it, therefore, about one-half as long as an ordinary red blood corpuscle. It is invariably found in the tissues wherever the disease is pronounced, and is to be regarded as the cause of leprosy, just as the bacillus tuberculosis, which it closely resembles, has been shown to be the cause of pulmonary consumption. The honor of the discovery of the bacillus of leprosy is due to Hansen, of Bergen, Norway, who first described it in 1874,[5] though much of our knowledge of its peculiarities is due to Neisser, of Breslau, who has written considerably upon the subject. This discovery has added a new impetus to the study of the origin of this hitherto puzzling disease, and with the *bacillus lepræ* as a starting point, investigators are likely to attain some decided results in the near future.

The microbic nature of the affection having been settled, the inference was at once drawn that leprosy, like other germ diseases, might be communicated from a diseased to a healthy person by inoculation.

An excellent opportunity to determine this *questio vexata* seemed to present itself when Dr. Arning, in 1885, obtained permission from the authorities of Honolulu, one of the Sandwich Islands, to inoculate a condemned criminal, with the privilege of offering him his life, provided he would consent to the operation.

His consent was obtained, and in four years the disease, which had come gradually upon him, was so well developed that all who saw him pronounced his case one of undoubted tubercular leprosy.

Considerable stir was created in the medical world by the announcement of this result, and the inoculability of leprosy was accepted by many as finally settled. The writer called attention at the time to the necessity for being very circumspect in accepting this case as final, owing to the fact that a large number of Hawaiians were already tainted with the disease, and the following words were used:[6] "This is not a perfect test case. The man was a *native;* had *he been a foreigner—an Englishman or an American* for instance—it would have been better. There still remains a possibility that he may have had the disease in his system before the inoculation was made." And it has turned that this was probably the case. Dr. Arning's successor at the leper settlement has ascertained that Keanu's son, nephew, and cousin german, are lepers, leaving the question still undetermined as to whether the man might not have developed the disease from a previous contact with one of these persons, or from having inherited it, with his three relatives, from a common ancestor.

There is some uncertainty as to the exact date of the introduction of leprosy into the Sandwich Islands, but it seems probable that the disease was introduced there by the Chinese prior to 1840, and that it became disseminated among the natives about the year 1848. Its rapid extension among these people can best be accounted for on the theory of contagion, for a disease that is hereditary only could hardly have sent to the lazaretto, between the years 1866 and 1890, over 4,000 lepers, and enabled a close observer like Dr. Prince A. Morrow, to estimate, in 1890, that "probably more than five per cent. of the entire native population are lepers."[7] The licentiousness of the native islanders, and their susceptibility to disease as evidenced in their past experience with small-pox, syphilis and measles, show that leprosy has found among them a fertile soil for propagation.

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[3] The writer has recently reported eighty-three cases of leprosy observed in Louisiana during the past five years. New York Medical Journal, March 12, 1892.

[4] Sir Morrell Mackenzie in the Nineteenth Century, December, 1889.

[5] Norsk Magazin vor loege Videnskab, 1874, fasc 9, and Virchow's Archives, Vol. LXXIX.

[6] New Orleans Med. and Surg. Journal, January,1889.

[7] Jour. of Cut. and Genito-Urinary Diseases, May, 1889.

Upon this subject Hansen has expressed himself in very strong terms, declaring that if an effort is made to explain, on the theory of heredity, the enormously rapid development of leprosy in the Sandwich Islands during the past forty years, then the conditions of the people must be far worse than has been reported; and though the women are notoriously lax in their marital relations, it is nevertheless necessary to admit either that they have a particular predilection for leprous men, or that the disease is becoming more virulent; two conditions which are not likely to be generally accepted.[8]

The following figures, from the island of Trinidad, speak for themselves[9]:

Population in 1805,	29,910.	Lepers,	3.
" 1813,	32,000	"	73.
" 1884,	180,000.	"	450.

But Dr. de Verteuille believes that the last figure, 450, is far below the correct one.

From the same locality Dr. Beavan Rake writes as follows:[10]

"I have urged on the Government the desirability of getting periodical returns of the number of lepers, but nothing has been done yet. The number of lepers in the asylum is hardly any guide, for the beds are nearly always full and there are numbers waiting outside. I, however, give you the following figures for what they are worth:

On January 1, 1869,	there were	70	lepers in the asylum.
On Dec. 31, 1873,	" "	86	" " " "
" " 31, 1881,	" "	128	" " " "
" " 31, 1887,	" "	176	" " " "

Thus in twenty years the number of beds in the asylum has been more than doubled. Comparing the census of 1881 with the *estimated* population at the end of 1887, we have:

	Population.	Lepers in Asylum.
1871	109,638	89
1881	153,128	128
1887	183,406	176

This shows the increase of lepers in the asylum to be out of proportion to the increase of population."

Referring to leprosy in British Guiana, Dr. Abraham says:[11] "There have also been many excellent reports concerning leprosy from the medical officers of British Guiana, and amongst them the careful and valuable work (*Leprosy in British Guiana*) by Dr. Hillis, formerly of Demarara, must be particularly referred to. Conclusive official statistics, however, relating to the increase or decrease of the disease are not extant. At the time he wrote, Dr. Hillis believed that 1 in 500 of the population was leprous.

The figures given for 1831 are 431, 1864 are 529, and for 1879, 525; but he is of the opinion that these latter are inaccurate.

He considers that while there has been an increase of 160 per cent. of the cases of leprosy in the twenty years of 1858–78, the increase of population has been only 45 per cent.

The Surgeon-General of the colony, Dr. Mauget, stated in 1879 that "leprosy is on the increase among the Creole population, but the coolies are those who by far add to the number."

The reports for the last few years give—

January 1, 1884, cases in the asylum	200.
" 1, 1885, " " " "	268.
" 1, 1886, " " " "	303.
" 1, 1887, " " " "	322.
" 1, 1888, " " " "	365.

Perhaps no single fact has added more to the belief in the doctrine of contagion than the experience of the self-sacrificing Belgian priest, Father Damien, who went out into the leper settlement of the Sandwich Islands in 1873, and after working amongst the afflicted people for thirteen years, in every capacity from priest to grave digger, acquired the disease himself, and finally died of it in April, 1889.

On his demise this story was told over again in the medical journals, and the religious and secular press were not slow in dilating upon the martyrdom of this devoted man. About this time it was ascertained that there were two or three cases of leprosy walking abroad in the city of London. John Bull was horrified, and the bare possibility of danger at home recalled to his mind the undoubted certainty of danger abroad, for the Queen of England is also Empress of India, and it is estimated that British India contains to-day more than two hundred and fifty thousand lepers. Other portions of the Queen's dominions have leper colonies, such as Trinidad, British Guiana, Jamaica, Cape of Good Hope, Ceylon, Mauritius and New Zealand. These facts, though known to the medical world, were rather startling when presented in lump to the British public, accompanied by actual figures. A movement headed by the Prince of Wales was immediately inaugurated to investigate the causes of leprosy, and the result is that for the first time in the history of this disease it is now being studied from a thoroughly scientific stand-point.

The Leprosy Investigation Committee, which has charge of this movement, numbers upon its list the names of the best known and most influential men of Great Britain, the prince himself being president of the committee. In October, 1890, three experts were appointed as British Commissioners to go out to India to study and report upon the leprosy question.

The Royal College of Physicians wisely selected as its nominee Dr. Beaven Neave Rake, Superintendent of the Trinidad Leper Hospital, an expert bacteriologist; the executive committee of the National Leprosy Fund nominated Dr. George A. Buckmaster, an expert sanitarian; and the Royal College of Surgeons nominated Mr. Alfredo A. Kanthack, an expert microscopist and bacteriologist. At the same time the governor-general of India appointed Surgeon-Major A. Barclay and Surgeon-Major S. J. Thomson to be associated with the British Commissioners in their work in India. The former set out for Bombay in October, 1890, and are now far advanced in their labors. A large number of lepers have already been examined and voluminous notes taken on their cases. During the past summer (1891) a halt was called at Simla, that the members of the commission, who had pursued their investigations in different portions of the country, might meet at this place, and also for the purpose of carrying on laboratory investigation. The conclusions which these gentlemen have arrived at, with one exception, are not as yet given to the world, but we know that many very interesting facts have been ascertained. The exception is the discovery of the fact that *the germ of leprosy can be cultivated.*

Possessing the disease in this "bottled up" condition the bacteriologist has his labors greatly simplified, for whenever he devises a new experiment he can go to this "culture" and draw as much of the concentrated virus as he chooses to use, with greater certainty that no extraneous products or other microörganisms will mix themselves up with his experiment and mar its scientific accuracy.

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[8] Virchow's Archiv. f. pathol. Anatomie and Pathologie, 1890, vol. 120, p. 476.

[9] Leloir, loc. cit.

[10] Leprosy: A Review of Some Facts and Figures. By P. S. Abraham, Med. Sect'y National Leprosy Fund.

[11] Loc. cit.

With these facts before us we would be but poor prophets could we not predict an early solution of the leprosy problem, and perhaps the first question that will be answered is whether or not the disease is communicable from one human being to another. But when the answer has been given in the affirmative, as we suspect it will be, another question will arise demanding an equally careful consideration, and that is: *How is it communicated?*

BENJAMIN RUSH, M.D., PATRIOT AND PHYSICIAN.

An Address to the Graduates of the Class of 1892, of the Michigan College of Medicine and Surgery, Detroit.

BY HAL C. WYMAN, M.D.,

PRESIDENT OF THE BOARD OF TRUSTEES, AND PROFESSOR OF SURGERY.

Ladies and Gentlemen:—It is the custom of the Faculty of this College to appoint one of its members to deliver an annual address. That office has fallen to me.

In casting about for a subject, it occurred to me that a useful lesson might be learned from the history of our country.

I know that I am expected to advise you how to make your work in life successful. It is easy to give advice.

That great convulsion in political affairs which gave to the world the Government of the United States brought many men into prominence whose names are now household words. Washington, Franklin, Adams, and others not necessary to mention, will live in the minds of the American people as long as American institutions endure.

Not a State in this great Republic but has its counties named in honor of some of these men; not a county but has its towns and villages named after some of them; not a city but has streets and avenues named after them. Even the geography of our country is illuminated by the names of the military and political heroes of the Revolution. We Americans think the grandeur, the majesty and the glory of Mount Washington are of small concern compared with the victories and the virtues of the Father of our Country, George Washington, in whose honor the mountain is named.

There was one man cotemporary with those I have named, whose deeds were no less heroic than theirs, but his memory is not perpetuated by political or geographical distinctions. Benjamin Rush was a doctor, a member of the Continental Congress, signer of the Declaration of Independence, Surgeon-General of the Continental Army, founder of learned societies, promotor of public schools, teacher of medicine, and searcher into the causes of epidemics which frequently threatened to make the fertile lands of the colonists uninhabitable. His biographer, writing many years ago, says he was a patriot, a versatile and prolific writer, a pious and skilful physician.

When Washington visited his army at Valley Forge, during that awful winter, it is said that he shed tears because of the sufferings of his soldiers; but Dr. Rush was busy at that time teaching them to live.

His knowledge of the medicinal plants which grew in the Chesapeake watershed had been enriched by observations of the remedies used by the Indians and enabled him to find medicines for the scurvy and camp diseases which were more dangerous and threatening to the cause of liberty and independence than the fleets and armies of the English King, at a time when medical supplies could not be obtained from the regular sources, and when, without them troops could not be called to check the advance of the invaders.

One of the first things this great physician did was to protest vigorously and successfully against the intemperate use of rum. He developed and enforced a rigorous sanitary discipline among the troops The people of that day appreciated the distinguished character of his services, and profited by the wisdom which fell from his lips and pen.

The foundation of preventive medicine, sanitary science, was laid by Benjamin Rush, in the studies he made of the epidemics which prevailed in Philadelphia during the last century, and of the dangerous diseases which affected the Colonial troops.

But the deeds of the heroes in the profession which you, ladies and gentlemen, have to-day entered, are not of a kind commemorated by the most enduring monuments devised by grateful men. Statesmen and military chieftains have cities and States, lakes and rivers, valleys and mountains named after them. It is singular to one trained in a profession as exacting as the one you have chosen, that fame and glory should be given to the men who slay thousands upon the field of battle, instead of to those who labor to save human life. This appears unjust. It would seem that the man who checks an epidemic, who invents and performs a surgical procedure which rescues thousands of human lives, ought to win fame as lasting as that of the man who conquers by force of arms.

Wellington, the soldier, rid the world of a tyrant; and wherever the English tongue is spoken, the name of Wellington is perpetuated and honored. Jenner, the physician, by valor no less heroic, rid the world of a plague.

Before Jenner's discovery of vaccination, small-pox slew thousands for every one slaughtered by Napoleon. Yet who ever heard of a Jenner Avenue, or even a Jennerville.

The people do not see the heroism of the doctor very long. It is said that republics are ungrateful. To the medical mind, the neglect of the American people to freshen the example of Benjamin Rush in the same lasting devices accorded to the generals and politicians of his time, is proof of the fact that republics are ungrateful.

For ten years the American Medical Association, which meets in this city next June, has been trying, without success, to influence a sufficient number of dollars to erect, in one of the beautiful parks of Washington, a statue on which shall be inscribed, "*Benjamin Rush, a patriot, a physician.*" A bronze figure, life-size, is contemplated—a mere hitching-post in comparison with that lofty pile in the same city, erected by Acts of Congress, to exemplify the political and military glory of George Washington. But I am not here to lament the lack of appreciation which as a medical man and, I trust, patriotic citizen of the noblest of Governments, I feel the American people have shown for the memory of Dr. Rush.

There is an ancient rhyme which comes to us from monkish Latin. In English it reads: "On the brink of danger, not before, God and doctor we alike adore. The danger o'er and all things righted, God is forgotten and the doctor slighted."

Medical historians tell us that this sentiment is of the most remote antiquity. It is, therefore, probable that the humble healer of wounds, the mere deviser of means whereby plagues may be banished from the homes of men, must continue his labors contented with knowing that he has made the journey through life easy and agreeable for his fellow-men.

After the war was over, Dr. Rush wrote copiously for readers in both the Old and the New World. On the one hand he extolled the fertility of our soil, the salubrity of our climate, the resources of our country. No writer of his time had more influence with thinking, industrious people of all countries. On the other hand, he argued the value of the Bible as a school-book, urged the establishment of the public schools and the virtues of temperance. His writings upon this subject place him among the earliest and foremost advocates of abstinence.

About one hundred years ago, addressing a class of graduates from the Medical Department of the University of Pennsylvania, on an occasion like this, he said: "Gentlemen, those of you who locate in the country, let me advise to settle on farms as soon as possible. The knowledge of chemistry which you have learned in the course of your preparation for the healing art is closely allied to agriculture. In the intervals of visiting your patients, you can occupy yourselves in teaching your fellow-citizens to develop the resources of our country."

Let me commend those words to you, ladies and gentlemen, with this addition: that your knowledge of physiology, of botany, and of the means of studying with your microscopes the minute causes of disease, will enable you to study, and perhaps cure or prevent, many of the infirmities which affect domestic animals, and the fruits and grains of the orchards and fields.

It is said that the diseases which affect the wheat crop in the United States cost the farmers fifty million dollars annually; money enough to relieve the distress of the people who are starving in Russia to-day.

Who is better qualified to study the habits of the fly that stings, or the germ that blasts the growing wheat, and apply a remedy, than the physician who is well trained in the modern methods of research taught in the medical colleges?

It was in Rome, when medicine was practiced by slaves, that members of our profession were compelled to practice their art in silence. But the success of the late war for independence, said Dr. Rush, has banished forever all slavish traits from our profession in the United States. It is not becoming of you to preserve an ignoble silence upon questions which affect the welfare of your country.

The sentiments uttered by our hero one hundred years ago are well worthy of our emulation to-day. In the conduct of the affairs of our country, mistakes will occur to you. I hope, gentlemen, those of you who find time in the intervals of attending to the numerous duties of your profession and the cultivation of your farm, will give some attention to the methods by which American citizens are made. I do not refer to the rapid transit manner in which the immigrant is converted into a voting machine. I am content to leave that to the practical politician. But we Americans urge, in our loftiest transports, that education is the bulwark of the State. And what is the State? Lincoln told us that it was this government of the people, by the people, for the people. And if education is the bulwark of such a State, we must insist upon an education and training for our children which guarantees to them ability to exercise intelligently, without the help of practical politicians, the duties of citizenship in a government of the people, by the people, for the people. I am afraid, gentlemen, if I may be permitted to burden you with my opinion, that the promoters of some of our systems of public instruction have lost sight of the principles maintained by the founders of our country. The immigration, the enormous influx of people from all the countries of the world, has, I fear, grafted upon our system of education vices which threaten to destroy the simplicity and the universality of the educational plans of our forefathers. The English-American, if you understand that term, wants our educational methods modeled after those of his native land. The German-American thinks our universities must be like those of Berlin or Vienna, Tubingen or Bonn. The Italian must have us resurrect and put new life, American blood, into the withered, aged university methods of Padua and Bologna. And the Sclave would have us copy after Warsaw and Moscow. The educational institutions of these semi-Americans are not maintained by governments of the people, by the people, etc. They foster and encourage wealthy and indolent educated aristocrats. Do we want to encourage by American educational methods an indolent, educated aristocracy? No! Then some of our institutions must be changed. The Commissioner of Education of the United States, dealing with data compiled from the census of 1890, shows beyond question or controversy, that a great struggle is going on in this country between large and small educational institutions. The great colleges and universities seek to crush the smaller ones. Columbia, Princeton, Pennsylvania, Michigan, Wisconsin and Minnesota make war upon the smaller colleges—war with the rapier, rather than the broadsword or the bowie-knife.

Let us see how this war is carried on. The universities are devoted to higher education. They conduct the post-graduate teaching. A very learned educator, who presides over one of the most thoroughly American and patriotic universities in our country, defines higher, or university education. He says, when asked where college work leaves off and university work begins, that it is where the required work stops and the selected work commences—meaning when an American knows what he wants to know, and is trained in the arts by which he can learn it, he should be admitted to a university. All of the warlike universities in our country are doing both required and selected work. The University of Michigan is dwarfed by the maintenance of its so-called literary department, and which is made the dominant feature of the institution.

Colleges like Hillsdale, Albion, Adrian, Kalamazoo; high schools like those of Detroit, Grand Rapids, Saginaw, for example, should do all the work of the literary department of the University of Michigan. Then the university might have ten thousand instead of two thousand pupils.

The foreign grafts upon our higher system of education, the so-called higher standard, fosters an indolent, educated aristocracy. It is un-American, unpatriotic. Why? The boy or girl of this State finishes his or her academic or collegiate required studies, technically speaking, at 18 or 20 years of age. The university admits them, or those of them who have money and can afford the time. The university adds four years, and the student graduates at 23 or 24. If a trade is to be learned, two to four years must be added, making the student 24 to 28 years of age. If a profession is chosen, three or four years more must be added, and if a post-graduate course and foreign travel are needed to complete the training, the student will be 28 or 30 years of age when he is ready to start with others in the battle of life. Who, at 28 or 30 years of age, with the enthusiasm of youth drilled out of them, with the tedium vitæ developed in them, are fitted for anything but an indolent, educated aristocracy. A system of education which does this is un-American, unpatriotic. The common schools may require your constant attention. As physicians, you will early observe that the congregating of hundreds of children in vast buildings increases to a frightful extent the danger of contagious diseases.

In this the city of Detroit, which, as the metropolis, should set the example for all the smaller cities of the State, the opening of the public schools in September is the signal for the activity of the health department of the city government, and for enterprise among the undertakers. You should seek, by every means in your power, to break up a system of public instruction which is characterized by an increase of mortality among the pupils. The children are helpless; parents are ambitious for them; they know the value of an education; the laws require an attendance upon the schools, and as physicians and patriotic citizens you must use the knowledge which medicine gives you for the purpose of discovering means by which this mortality can be cut down. If you cannot cure the contagious diseases which are spread by the assembling of pupils in large numbers, you can prevent them by urging the establishment of smaller school buildings, with less money invested in brick and mortar and more invested in teachers. The fewer pupils the teacher has, the more likely will the teaching be individualized and adapted to the needs of the pupil, and the quicker will contagious diseases be recognized. Aside from the foreign relations of our country, no question more deeply concerns the thinking citizen than does the future of our public schools. Questions are arising on every hand concerning this problem of the most vital interest to all. Some people would have us believe that women are not in their proper sphere as teachers; as moulders of the minds of boys they are failures; that a boy, or a girl for that matter, needs the stimulus of the masculine mind for the highest development of their faculties. Others say that it is not right, and that the State should not require one whose children dare not attend the public schools for fear of moral contamination, to pay taxes for the support of schools, the curricula of which are not, according to their thinking, likely to advance their own religious beliefs.

The unfortunate differences which have developed in connection with religious training in the schools must be settled in a manner satisfactory to both parties.

This difference has been discussed, pro and con, by members of a sister profession mainly. Medical men have had very little to say about it. I can see no impropriety in a physician who studies the relations of morals to health taking side in the controversy. Let any medical man or woman who has visited the prisons and asylums observe how many of the inmates owe their presence there to inherited and acquired defects of mind and body, and he will be convinced that some attention should be paid to the moral training of pupils in the public schools. The simple teaching of ideas of time, place, form, consistence and numbers is not sufficient to make a competent citizen of every child. Ideas of right and wrong should not be left entirely to nature, uninfluenced by art, every physician knows. Witness the pitiful examples of persons in this city who have been convicted of offenses against the people and sentenced to the House of Correction more than fifty times.

Medical men know that the causes of such repeated and persistent immorality are indelibly marked upon the adult brain; that such cases cannot be cured, but may be prevented, in many instances, by proper training during childhood.

There is one other matter that the physician, in his capacity as a diffuser of information, should have thoroughly in mind. His wealthy patients may consult him in regard to the final disposition of their wealth.

He should be prepared to take a liberal view of affairs, to have a broader and wider-reaching mind than the man whose life has been devoted solely to the accumulation of dollars.

Some people have riches thrust upon them. It not infrequently happens that a turn of the market, or the invention of a labor-saving device, yields a fortune of vast proportions to an American citizen.

The holders of vast wealth do not always claim to be absolute possessors of the sums which they have accumulated or, as some would say, appropriated by fortunate handling of the labor of others. They are sometimes anxious to dispose of portions of their holdings for the benefit of their fellow-men, and ask the doctor for his views. What school shall be endowed, what art museums to build, what parks to be laid out, asylums and hospitals to be built, are questions asked him.

The physician should always be familiar with the needs of the masses of the people, for the poor are his best patients, because God pays him for taking care of them.

Therefore, my friends who are about to commence the practice of the art you have learned of your Alma Mater, you will find yourselves brought closely into touch with all that is great and noble in the ideas and customs of the people of the United States.

Let me urge you not to forget the words of Dr. Rush, that the American Revolution has rescued medicine from its former slavish rank in society, and to appreciate at its full worth the exalted position your admission to a useful profession insures to you.

In illustration of the relative social standing of medical men here and in some countries, let me relate that within the last few years I read in a leading foreign medical journal a letter written by a foreign physician, in which the writer asks if it is not time that a physician, when called to the sick in great houses, be permitted to ring the front door bell and enter, and not be compelled by etiquette to enter the house through the servants' quarters.

Let me, before closing, call your attention to the fact that there are some diseases which your science and art may be unable to cure.

Your most thoughtful prescriptions and most carefully planned and executed operations may result in failures mortifying to your friends and to yourselves, but do not be discouraged and give up hopes of ultimate success. Keep right on, with all the power and determination you possess, trying to relieve the sufferings of your patients, exhausting every resource which science shows to be safe and applicable to the case.

Let me explain to you that the profession you to-day enter has been very liberal with you. It has taught you its methods, revealed to you what it knows of the intricacies of the human frame.

The burden of payment is now on you. The profession will expect you to add something to the sum of knowledge by which human infirmities are healed. You must avail yourself of every opportunity to study disease and its remedies.

I would advise you to maintain a laboratory, in which you can employ the instruments of precision by means of which the science of physiology is advanced and the mysteries of diseases are revealed.

Who knows but you may find a symptom, demonstrate a germ and invent a surgical procedure which will enable you to prove to the profession how cancer can be cured?

In your researches, do not forget the lessons you have learned from the vegetable kingdom. Who knows but you may some day discover, growing in the fields or forests, a flower that will cure consumption, and rid mankind of its most exacting and relentless foe?

REPORT OF THE SURGICAL CLINICS,

Read at the Western Pennsylvania Hospital, before the Students of the Western Pennsylvania Medical College,

BY PROF. J. B. MURDOCH.

[Reported by E. E. Wible, M.D., a member of the Graduating Class.]

(*Concluded from page 420.*)

TREPHINING FOR INJURY TO THE HEAD.

Here is another very interesting case. This young man was found along the Alleghany Valley railroad track last night, in an unconscious condition, due to some injury of the head. When he arrived here in the hospital, he was not paralyzed in any of his muscles but vomiting, pupils were equal. This morning he is paralyzed on one side and convulsive on the other. The left side is paralyzed and the leg and arm of the right side he is constantly throwing and tossing about. The question is whether it is due to concussion or compression. When paralysis is present immediately, from the time of an accident to the head, it is due to depressed bone, when it comes on gradually sometime after an accident, it is due to a blood clot and when it comes on in a week or so, it is due to inflammation or inflammatory products. You observe the sterterous breathing in this case, which is one of the signs of compression. The compression may be due either to the pressure of blood or depressed bone. It was the habit of older surgeons to cut away the scalp entirely when the trephine was to be applied and it has been only within the last one hundred years that the scalp was retracted, being introduced by a surgeon by the name of Hay.

I now cut down on the right side of the frontal bone, avoiding the temporal muscle as much as possible, but I find no depression or fissure here, hence I will trephine over the fissure of Rolando, because of the good results I have had from every case that I trephined at that point. The method of determining the surface marking of the fissure of Rolando, I have described to you at previous operations. After having raised the pericranium with the scalp, I remove a button of bone here but do not find any clot between the dura mater and the skull, which I thought I might possibly find. I am going to do in this operation what I have never done before, that is, as soon as the button of bone was removed it was put in a solution of bichloride of mercury (1-500) and when I am ready to sew up the scalp I will break it into a number of pieces and replace it in the opening. I will now make an opening over the anterior and inferior part of the right parietal bone, where a clot often forms from injury to the middle meningeal artery. I have now removed a button of bone here but do not find a clot.

I now replace the button of bone I have removed, dividing one of them into four pieces and the other into about a dozen fragments. I insert some strands of catgut for drainage and unite the angles of the scalp with wire sutures and the remainder of the scalp incision with catgut sutures. I apply the usual antiseptic dressings and hold them in position by a six-tailed bandage, which is better than a skull cap, although not so neat. He has been given a hydragogue cathartic, anticipating inflammatory action. Although we have not found anything by trephining this patient, yet we hope we will have done him good by relieving pressure and that he will thus be benefited, as all the other cases I have trephined.

ANOTHER CASE OF TREPHINING.

This man, æt. 36, a silver miner by occupation, has always been healthy and never had any severe disease except lead-poisoning.

In February, 1888, he received some injuries to his head while mining and lay unconscious for fifteen days, and for eight weeks he was in a delirious condition. In the latter part of the summer he went to work again. He complains mostly of double vision. About two years ago he was in a New York hospital under treatment but received no benefit. In June 1890, he went to Arizona again and worked four months.

Dr. Seguin, a specialist on nervous diseases, of New York, writes me that he thinks the trouble is due to lead poisoning and advises the administration of potassium iodide.

I find a depression of the scalp and skull over the left parietal bone and I propose to trephine at that point. I make a horse-shoe incision and turn back the scalp and in doing so I find the scalp very adherent to the skull. Having now retracted the scalp you all can see the depression of bone. I apply the trephine, remove a button of bone and find the dura mater adherent to the skull and of a hardened and thickened feel. I now insert a rubber drainage tube, close the scalp wound and apply the ordinary antiseptic dressings.

February 7, 1891.

Review of some cases operated on:

Gentlemen:—The first case I bring before you to-day is the man from whose skull I removed a button of bone, one week ago to-day.

His right arm has improved since the operation, having less twitching thereof, and his mind is less confused and clearer now.

You will remember this as the man who got hurt in the silver mine, while employed therein; he says he feels much better but is still a little nervous, of which he complained considerably before he was operated on.

The wound has not been dressed since and we will renew the dressings to-day. You can see there is not a particle of suppuration in the wound, and that it is almost entirely healed.

I am now going to show you two cases of Symes amputation of the foot. It was the custom, before Mr. Symes advised this operation, to amputate at the so-called "point of election" for nearly all injuries of the foot requiring amputation. There are three classic operations on the foot viz: Hey's, Chopart's, and Symes', while there are as many as thirty other operations performed on the foot.

In Hey's operation, we amputate at the tarso-metatarsal joint and saw off the projecting internal cuneiform bone.

Lisfranc's operation is the same as Hey's, with the exception of not sawing off the cuneiform bone. Chopart's, or the medio-tarsal operation, in this the scaphoid and cuboid bones, with all the parts in front of them are removed. The objection to this operation is, that the flexor muscles of the foot are severed, and consequently the tendo Achilles draws back the stump and it may thus become necessary to divide the tendo Achilles.

Symes' operation is the amputation of the foot at the ankle-joint. There is another operation known as Pirigoff's in which the entire foot is removed except the posterior part of the oscalcis. The first one of these cases is the old gentleman, on whom I operated three weeks ago to-day.

You remember, there were a number of sinuses running up the leg and it was a question whether to amputate the leg or at the ankle-joint. You see he has now a good solid stump notwithstanding the diseased condition of the leg at the time of the amputation.

By thus preserving the hard tissue of the heel, this man will be able to walk on it and need not be encumbered by an artificial limb in his occupation, that of a coal-miner.

Although, artificial limb manufacturers, say that they can adjust an artificial limb better and secure better satisfaction when an amputation is performed some distance above the ankle-joint, yet, generally speaking, the Symes' amputation is the better to perform.

This second case of Symes' amputation was operated on five weeks ago to-day; he is able to bear some of his weight on it already.

The next case is the boy from whose leg I removed a large tumor, and which I think was a sarcoma. I want to show him to you before he goes home. You remember we were advised by some to amputate the limb, but we removed the tumor, which was not adherent to the bone, and his leg is now well and needs no more dressing. He is able to walk about as well as usual. I find no evidence of any return of the growth in the cicatrix; he complains of a severe headache of which I am unable to give a cause.

OPERATION ON A DISEASED ELBOW.

This young lady received a contusion on her elbow joint two years ago; soon thereafter it suppurated and opened.

Last May I excised the joint without benefiting it much.

It is quite probable that it is tubercular disease of the joint. And it is just such a case in which the Koch lymph might be beneficial if we had it, because it is external and you could get rid of the bacilli. All I propose to do is to open the sinuses and to scrape them out. In wounds of this kind where the sinuses are filled with pus, we cannot always prevent septic processes from taking place in the wound.

I apply an Esmarch's bandage because I think in operations upon bone it is very necessary, so as to keep the blood away that you may be able to see the bone on which you are working.

I will bite away all the dead or diseased bone. In all operations on the elbow joint when you fear ankylosis, put up the arm in a right angle, or a splint a little more than a right angle, so that if ankylosis should occur the patient will be able to get his hand to his mouth.

I have now removed all the dead bone and I think we may probably get motion in the joint if it gets well at all.

I close the wound with wire sutures, apply a splint that is almost straight and which can gradually be brought to a right angle by a screw arrangement which connects the two parts of the splint. It will thus be allowed to remain for a week if there is no elevation of temperature, and the dressings do not become soiled.

NECROSIS OF THE HUMERUS.

This young man was run over by an ingot car at Braddock thirteen months ago, sustaining a compound fracture of the left thigh and a fracture of humerus near the shoulder. This is an interesting case and I want you to observe the deformity of the thigh; the upper fragment is behind and internal.

The limb is four inches shorter than the other. Fractures at this point of the femur are very likely to result in deformity. I do not know how or who treated this fracture but it is likely that all was done for it that was possible.

I am told it was treated on a double inclined plane, a method that is not much employed nowadays, the method of extension and counter-extension having about superceded it.

There are openings in front and behind the arm where the fracture had been, which are discharging some pieces of bone.

I cut down and remove a splinter of bone over an inch in length and scrape the sinuses with a Volkmann spoon. I now insert a small drainage tube clear through the arm, close the wound and apply the usual antiseptic dressings.

February 14, 1891.

CRUSHED FOOT.

Gentlemen:—I only bring this patient in that you may see his foot while it is being redressed.

He had his foot crushed ten days ago by being traversed by the wheels of a railroad engine. The toes were crushed and when he was brought to the hospital, the resident physicians amputated his toes but preserved all the metatarsal bones, thus preserving the arch of the foot. When the arch of a foot is destroyed in any way it sadly impairs the usefulness of it.

Some of the flap has sloughed on account of its being made of injured tissue; but it is healing well now.

It is not a good plan to amputate too much of the tissues of a limb when it has been injured, but it is better to wait and see how much will slough. But if it is possible for you to tell how much of the tissues will slough, then amputate all such at once.

In this case we use the warm, moist antiseptic dressings, covered over with some impervious material, as oiled paper, or oiled silk, to retain the heat and moisture. It was formerly the custom to use hot poultices of bread and milk, flaxseed meal, etc., all of which were filthy and veritable hot-beds to breed germs of disease.

OPERATION ON NECROSED BONE.

This boy comes to us with the skin over the shin-bones reddened and inflamed and openings running down to the bone, from which pus is coming. We learn from his history that he has always been healthy until four years ago, when he had an attack of inflammatory rheumatism, which lasted four months.

I introduce a probe into these openings, called cloaca, and come at once in contact with dead bone. These openings were usually called fever-sores some years ago, because of their being due to the periostitis following typhoid fever. Other causes are, injuries to the periosteum, wounds, syphilis, and the cachexia, which was formerly called scrofulous.

Periostitis consists in a swelling of the periosteum and becoming thickened by the production of inflammatory lymph, thus cutting off the blood supply to the bone and causing necrosis of the same.

The treatment is to cut down through the periosteum in the early stage so as to relieve its tense condition and give exit to the fluid underneath it. On the tibia at about its middle is an enlargement called a node. I apply an Esmarch bandage, and then make an incision along the tibia, cutting down through the periosteum. I now push aside the periosteum with the periosteotome and find several openings in the bone. I will now trephine over one of these openings and connect the others with it by the chisel and mallet, and now having done so, I come on to a piece of bone which is called the sequestrum. I remove it and scrape out the medullary cavity. When the skin unites over this wound, it will be somewhat inverted or depressed.

Mr. Shea advises the sewing up of this kind of a wound without any drainage, and sewing it tightly, believing that the clot which collects, organizes, and that healing is more rapid. This, probably, may be true, if you were sure that there is no infectious material in the wound. I pack some bichloride gauze in the bottom of the wound to secure drainage, sew up the wound with continuous catgut sutures, and apply the usual antiseptic dressings.

Now on introducing a probe into the cloaca over the tibia of the other leg, I come down at once to bone that is denuded of its periosteum. I make an incision along the tibia as in the other leg, cut down into the medullary cavity with the chisel and mallet, remove some sequestræ of bone, and scrape out the soft and diseased bone. I now pack the bottom of the wound with bichloride gauze, sew up the wound and apply the dressings as in the other leg.

February 19, 1891.

GUNSHOT WOUND OF THE HEAD.

As Prof. King has telegraphed me that he would be unable to be present at his clinic to-day, I will take this opportunity to show this man who was found on 29th street last night, in an unconscious condition, and brought to the hospital. It is rumored that he was followed from a saloon by some colored men and shot by one of them. Dr. Graham, the resident physician, found two wounds above the left eye, one a small wound with inverted edges, and the other about three-fourths of an inch above, and more lacerated than the former. The man has what is commonly called a "black eye." He was in a stupid condition all night and he is now reviving, although yet unable to give any account of the affair. I will make a few remarks regarding such wounds as this. In gun-shot wounds the wound of entrance is always inverted. It is generally supposed by the laity to be your duty to probe at once for the bullet when you are called, but by doing so you usually do more harm than good. It is said that Andrew Jackson carried a bullet in his leg for twenty years, having received it in a duel, and did not have it removed until during his term of the presidency. I have adopted this rule:—to let such wounds alone when I am first called to see them. Never make any search for a ball until you have instruments and everything else in readiness to extract it. It is well to find out the history of the injury, the position of the patient when shot and in what direction the bullet came, for the reason that you can seldom tell the direction the bullet took by the appearance of the wound. Bullets usually pursue a very peculiar and circuitous course in the cavities of the body. They have been known to have one point of entrance and two of exit, having been split by coming in contact with a bone in its course through the body. My impression is that the bullet entered at this small wound, rebounded from the skull and emerged from the larger wound a little above.

I intend to ascertain if there is any wound to the skull; for that purpose I reflect a flap of the scalp but find there is no fissure. If the bullet had entered the skull I would have applied the crown of the trephine, removed a button of bone and then taken out the fragments of bone. I now unite the wound with wire sutures and dress it antiseptically.

February 21, 1891.

COMPOUND FRACTURE OF THE THIGH.

Gentlemen:—I have a number of cases to show you to-day and also one or two operations.

This young man before you, I operated on in your presence on Jan. 24, 1891. It is a case of conservative surgery, which well illustrates antisepsis and drainage. He was brought here from Greensburg, with a compound fracture of the thigh which he received while coasting on Christmas day. He was treated at his home for about three weeks, and when he was brought here he had a high fever, his thigh was infiltrated with pus and he had a large bed-sore on his back. After a few days of tonic treatment I operated on him, excising the ends of the bones, wiring them together, and inserting a large drainage tube. I also removed a number of fragments of bone from the wound. After the operation his temperature decreased, his appetite returned and he says he feels very well now. You see the wound is covered with healthy granulations and is almost closed. There is still a false point of motion in the limb. The wire is still in position and will be left there. The wound is dressed daily with a solution of carbolic acid (1-40). He had a bed-sore almost as large as a hand and almost exposing the sacrum when he came in. You see it is now almost healed. I regard this a greater triumph of surgery than when an amputation is performed. His limb of course will be three inches shorter than the other, which will cause a slight limping.

URINARY INFILTRATION.

There were four or five cases of rupture of the urethra came to the hospital within the last few weeks with extravasation of the urine. It seems that when a certain kind of injury comes in there are almost always several of the same kind come in within a short time. It is strange how a urethra is ruptured; sometimes a wagon passes over the pelvis, rupturing the urethra and not fracturing the pelvis. The usual history of a case when the urethra is ulcerated from a stricture is as follows: first a gonorrhœa lasting for some time, then difficulty of passing the urine until some day can not pass it at all and thus have retention of urine, then while straining to pass urine the urethra is ruptured posterior to the stricture and the urine infiltrates into the tissues instead of remaining in the bladder. The urine then acts as an irritant or poison and may cause sloughing of the tissues. The first thing to do in such cases is to let out the urine by free incisions. The question arises, why does the urine pass up over the abdomen instead of down the thigh? The answer is that the deep layer of the superficial fascia of the abdomen is attached to the triangular ligament and on each side to the ramus of the pubes and ischium, and to Poupart's ligament in front. It extends forwards and is continuous with the dartos of the scrotum and then extends up the abdomen. The urine being prevented from infiltrating into the thigh by the attachment of the fascia to the ramus of the pubes and ischium and to Poupart's ligament.

This man fell a distance of 25 feet, a few weeks ago, injuring his back and fracturing the astragalus of the left foot. Ever since the accident he had to be catheterized every two hours, or it would cause him much pain and distress. I propose to make an incision into the membranous portion of the urethra for the purpose of draining the bladder. The operation will be the same as that of median lithotomy. I will introduce my left forefinger into the rectum till its tip touches the prostate gland, then insert a bistoury one-half inch in front of the anus and carry it in till it gets in the groove of the staff, then enlarge the wound as I withdraw the knife. The assistant will hold the staff directly in the median line and perpendicularly, lightly hugging the pubic arch, and by the left hand hold the scrotum out of the way of the operator. Now having done the operation as stated I have my finger in the bladder. I will wash out the bladder with warm Thiersch's solution and will insert and allow to remain in it a drainage tube. I now pack the wound with some gauze; put on a compress and apply a "T" bandage.

ANOTHER CASE OF EXTRAVASATION OF URINE.

We are unfortunate in not having a history of this old gentleman. He was brought in last night, his penis and scrotum much swollen and also extravasation of urine up the abdomen, the result of a stricture or injury. The cellular tissue of the scrotum is in a condition of gangrene. The indications for treatment are: 1. to permit the escape of the urine from the tissues. 2. To allow the urine to escape posterior to the stricture. There is no retention of the urine here because it has found some way of escape posterior to the stricture. I will first incise the foreskin because I cannot retract it over the glans. I do it with a probe-pointed bistoury which may be either curved or straight. I have endeavored to find the internal opening of the urethra; but find it I cannot. I make an incision on either side of the scrotum, which I find is full of pus. If we can keep him alive until he gets over his present depressed condition we may be able to effect a cure. The parts will be dressed with moist antiseptic gauze and covered over with oiled paper.

ABSCESS IN THE PERINEUM.

This colored man has been sick three weeks. When he came to the hospital a few days ago, a small tumor was found behind the scrotum, and the bladder was distended. The resident physician opened the tumor in the median line, and 32 ozs. of pus escaped. After this he could be catheterized, and his urine has thus been drawn off ever since.

I next present the gentleman I operated on three weeks ago, and removed a button of bone from the left side of his head. The patient had been suffering from peculiar nervous sensations and trouble on his right side. It has healed now so solidly that you could not tell by feeling that a button of bone has been removed. He is not entirely well; but he says that he is much improved.

EPILEPTIFORM CONVULSIONS.

This boy, æt. 19, a miner, suffers from epileptiform convulsions. His family history is good, except two sisters who had fits until they were about 24 years of age. This boy never had any sickness to confine him to bed. Ten years ago he fell 40 feet, alighting on a railroad track and receiving a large scalp wound on the right side of his head. Ever since the accident he has had headache. The toes of the left foot drag on the ground unless he makes considerable effort to lift them. Thirteen months ago he commenced to have convulsions, sometimes having four or five a day, and again sometimes going for four weeks without them. The scar is a little to the right of the median line, over the frontal bone. I intend trephining him, if I find a depression of the skull after I have turned back the scalp. I make a large horse-shoe-shaped incision, and find the scalp very adherent to the skull. I loosen up all the adhesions that have been caused by the injury. Even the mere loosening up of an adherent scalp like this has proved of much benefit to the patient. I will not now do anything more, and if we have not benefited our patient, we will remove a button of bone over the fissure of Rolando at a later time. I now sew up the wound and apply the antiseptic dressings.

March 14, 1891.

EXTERNAL PERINEAL URETHROTOMY.

Gentlemen:—I will bring before you to-day a patient who was hurt five weeks ago in a mill, by being caught between a heavy truck and a post, and sustained a fracture of the pelvis and rupture of the urethra. He was sent here for rupture of the bladder. When he came into the hospital he was suffering from shock, and bleeding from the meatus. A catheter could not be passed at that time. He was put to bed and bottles of hot water applied, and a short time afterward a catheter was passed. At one time he was able to pass his urine without the catheter. His symptoms of late have not been improving, his urine becoming more and more ammoniacal, and within the last few days there appeared a red, shining tumefaction along the right inguinal region, indicating the extravasation of urine into the tissues. The appearance of blood at the meatus showed that it was a rupture of the urethra and not of the bladder, for in that case the blood would have extravasated into the tissues.

On introducing an instrument into the urethra, it enters a false passage at about the triangular ligament, and deflects to the left. I propose to do the operation of external perineal urethrotomy, opening the urethra in front of the laceration, so that the urine can find exit externally. The laceration seems to be posterior to the deep layer of the superficial fascia. If the urine is not let out of the tissues, sloughing is inevitable. The parts are thoroughly washed and shaved. If I am able to pass a staff of a good size into the bladder it will very much facilitate the operation. I was able yesterday to get in a good-sized instrument.

I think I have now succeeded in introducing the staff into the bladder.

The patient is now placed in the lithotomy position. I make an incision in the median line or raphé, about an inch in length, cutting through the skin, superficial and deep fascia. I find we have our staff in the false passage instead of the bladder. I have now my finger in the bladder, and we will wash it out with warm Thiersch's solution, which is not irritating, as the other antiseptic fluids are. Its formula is as follows:

℞. Salicylic acid, ʒss.
Boracic acid, ℥ss.
Aquæ, Oviij.

It is hardly necessary to put in the bladder a drainage tube; but we will at any rate, and wash it out every day, so as to keep his bladder drained of the foul-smelling fluid which we have allowed to escape from it. I now incise the tumefaction on the right of the scrotum, and find there has some pus formed already. I now cleanse the parts thoroughly, and apply the antiseptic dressings, allowing the drainage tube to protrude through them.

These wounds are troublesome to deal with. Two years ago, a miner was received in the hospital, and had his urethra ruptured about the same as this man before you. I operated on him the same as in this case, and he remained here for six months. He received his injury by a bank of coal falling on him, while he was working on his knees, and buried one heel in his perineum.

These lacerations of the urethra are liable to result in stricture, especially if they are transverse; the longitudinal incisions that are made in urethrotomy, however, do not.

Creosote for Influenza.—Iselin (*Corr.-bl. f. Schw. Aerzte*) recommends creasote in doses of from fifteen to seventy-five minims daily in the treatment of influenza.

SURGICAL CLINIC, AT THE HARLEM HOSPITAL, NEW YORK.

BY DR. THOMAS H. MANLEY.

[Reported exclusively for The Journal of the American Medical Association.]

Gentlemen:—You will remember, in the notice of this clinic, it was announced that among other operations which we would proceed with to-day, was one of abdominal section, for the removal of an interstitial fibroid of the womb; an abdominal hysterectomy, so-called. Well, here is the patient before you; and, while we must congratulate her on her escape from the perilous ordeal which was before her, we are sorry to have disappointed you.

But, it seems to me, that the history of this case and the simple means by which she has been rapidly and radically relieved of her infirmity, are by far of more practical value than would be any operation, which would involve the loss of blood and an extensive mutilation. Her history is briefly this: she is 43 years old, free from any organic disease, and had good general health until a little more than three years ago, when simultaneously with a dragging pain in the back and loins, she noticed an unusual fullness over the uterus rather toward the left side. She failed to see her physician concerning it, for nearly two years; when it had so increased in volume as to greatly inconvenience her and aggravate her pains. At this time, and for some time before it, she was having a copious metrorrhagia, between the catemenial epochs, which greatly emaciated and exsanguinated her. Her medical attendant has very patiently and thoroughly employed all the modern remedies, local and constitutional. She derived no benefit from any, except electricity, which, after each séance, greatly eased the pain. However, it made no impression on the neoplasm or her exhausting hæmorrhages. Hence, as her health was steadily giving way, and she was incapacitated from doing any work, she was willing to submit to anything which offered her a promise of cure. And her physician, Dr. Nivison, of this city, a highly skilful practitioner, decided that a hysterectomy was the surest means of effecting a cure; though when he handed the case over to me, he requested me to use my own judgment, and deal with it as I thought best. I shall not say anything about differential diagnosis here, but will ask your attention to the various methods employed, when we treat these uterine myomata, by direct, surgical intervention. They, as you know, are chiefly of two kinds; viz., palliative and radical. Among the former is the removal of the ovaries and ligation of the uterine arteries. The latter, are the removal of the uterus and tumor, by the abdominal or sacral incisions; their total removal by morcellation, as instituted and first extensive practiced by Pèan, of Paris; and, thirdly, the removal of the myomatous mass, down through the cervical canal without any serious injury to the uterus, a method first successfully instituted by myself, in America, for the evulsion of very large uterine, neoplastic growths. After having successfully operated last year for the removal of a uterine myoma, taking away womb, ovaries and all, on a careful examination of the specimen, we found that the growth might have been readily removed through the vagina, as was a very large, supposed inoperable tumor, of this description, removed by me, three years ago. Now, the removal of the ovaries is not in itself free from danger, and they may be so bound down, or dragged under the uterus, as to be beyond our reach. But, what is the worst of all, their removal may in no way influence the growth of the mass. Ligation of the uterine arteries, when the cervix is drawn far up into the pelvic cavity, is impracticable; while, if attainable, the compensating dilatation of the ovarian vessels, will in a short time, make up for the occluded uterine arteries. It is unnecessary to remind you that every sort of operation undertaken, with a view of removing a large adherent uterus and tumor, is attended with great danger to life; and, with the most expert, is full of difficulties, besides many may be even impracticable.

Hence, in this case, before we proceeded to do a hysterectomy, we first essayed to relieve our patient of her tumor by the utero-vaginal passage.

The cervical canal was gradually, but widely opened by the use of tents, when two fingers could be introduced into the uterine cavity. Now, on the left side, the uterine wall was felt compactly occupied by a large granular mass in its center, with an extensive capsule, which by adhesive inflammation was glued to the entire endometrium. It was a homogenous mass and seemed to consist of mixed elements. Little further was done, at the first sitting. After a few days, dilatation, thorough irrigation and drainage, having been kept up, she was again placed on the table, when with the use of the volsellum-forceps, the long scissors and the curette, every remnant was swept away, The result has been, as you see, the uterus which two weeks ago, was as large as a cocoanut, is now of its normal size. There is no more pain, no more morphine eating, and to-morrow, or the next day, she will leave the hospital.

The next case which I wish to show you, is one of incarcerated, umbilical hernia, in a woman. She is 40 years old, has had four children. She first noticed this shortly after the birth of her last child. She comes to us for relief; because for the past year she can do no work, without having symptoms of strangulation, and is compelled from time to time to take the bed, and apply soothing applications over the inflamed protrusion. You will notice that the hernial mass is large, doughy, and but partly reducible. This species of hernia is the only one, that I am acquainted with, which appears to ever arise as a consequence of the parturient effort in women. Although these extrusions in this situation are commonly designated umbilical, in fact, they rarely are so, as they usually commence to form in the linea alba immediately above or below the ring and after their emergence insinuate themselves under the thin umbilical scar. One anatomical peculiarity about them, well to remember, is, that they have no sac.

In this case, my aim will be to freely expose and detach the displaced viscera. If the omentum is present, in excessive quantity, it will be ligated and cut off. After having returned the hernia, I will secure a complete and entire peritoneal covering in it and then close in the overlying structures by the continuous silk suture. The remaining parts will be closed in with catgut, layer by layer. No drainage will be employed.

The next patient is a man, on whom we will perform an amputation of the thigh. As his case is quite a unique one and conveys many useful lessons, it may repay us for the time consumed, to rehearse part of it. Six days ago, while adjusting a belt on a pulley, he was caught and dragged up, over a swiftly revolving shaft, and thrown about twenty feet. When our ambulance surgeon, Dr. Arch. Dixon, saw him, he was in a state of collapse and he feared he would not reach the hospital alive. However, he slightly reacted. When I saw him, two hours after the accident, I discovered that he had a dislocation of both knee-joints; the condyles of each femur being driven downward posteriorly and the head of the tibia upward and forward. The crucial and posterior ligaments, with the popliteal muscle, were completely torn through. Besides, he had a compound fracture of the right humerus close to the axillary space, on the same side, fracture of the shafts of five ribs, in their centre.

The luxated bones were easily replaced; but, as their ligamentous connections were destroyed, on the least movement of the limb, they at once slipped out of place again. We found that the best position that we could place the knees in, and which gave the most comfort, was by having them semi-flexed under pillows. The superior fragment of the broken humerus was drawn far inward, by the unopposed pectoralis major muscle; while its sharp-pointed end threatened to pierce the integument. The fractured ribs were not much displaced. Singular to say, that notwithstanding the terrible violence which the body had sustained, he reacted well and the following morning was in a fair condition. Both lower extremities from the patella downward were cool and showed unmistakable evidence of injury to their vascular supply. When we bear in mind that the popliteal artery lies close to the inter-condyloid space; that its sheath is firmly retained in position by a dense fascia, and that it is all the more fixed by the large terminal branches, which it gives off here, we can the better understand how a complete luxation at the articulation is impossible, without seriously compromising the integrity of this vessel.

We now, by the use of hot bottles, hoped to avert the necessity of amputation, by endeavoring to favor collateral circulation. We were partly successful on the right side: but indubitable signs of dissolution in its fellow, appeared on the third day; and we should have amputated sooner had we consent to do so. Now, you will notice that the limb has a pale and shrunken appearance and that there are many patches on the surface of the integument, which resemble so many eschars, from burns. During the past twenty-four hours, gangrene has rapidly advanced towards the body, so that now it has reached the middle of the thigh, hence, no doubt, the best course to pursue, would be to do a hip-joint amputation, but his general condition is so feeble that I fear the immediate consequences; accordingly we will carry the amputating knife through the upper third. You will notice that the opposite limb, though warm, has a bloated and ominous appearance.

Now a word about flaps, in amputation, before we commence. The only safe guide to surgeons in flap-making, is experience. Too much tissue is as bad as too little, for we will have a slough; though it is always best when we select, to cut freely, so that, if there is a redundency, it can be later trimmed away. It is only in pathological conditions, arising from a constitutional origin, that we can safely apply the classic amputation of the text-books. In traumatisms, they may be wholly ignored; for the end which a conscientious surgeon should always have in view, is not a handsome, but a strong and useful stump.

NOTE.—Patient operated on for hernia is making an excellent recovery. The man on whom the amputation was performed developed septicæmia and died three days subsequently.

LECTURES ON GENERAL ETIOLOGY.

Delivered at the Chicago Medical College.

BY H. GRADLE, M.D.

LECTURE V.

a. In illustration of secondary diseases *produced in a mechanical manner* may be quoted the remote pressure effects of new growths, aneurysms or tumefactions of any kind. If the pressure is exerted upon nerves it leads to their atrophy; if it involves tubular organs like the intestines or the ureter it is followed by the consequences of their obliteration. Another mechanical instance of secondary affection is the strangulation of the intestines by peritoneal adhesions. Stenosis of the nasal passage can cause mechanically hypertrophic changes in the nasopharynx and Eustachian tubes. which often become complicated by subsequent infections. Interference of respiration on account of enlarged pharyngeal or faucial tonsils may lead to deformity of the thorax and possibly even spinal curvature. A secondary disease of mechanical origin is also furnished by the detachment of a clot within the circulatory system and the subsequent embolism of a terminal artery. Under this aspect may also be included fat embolism resulting from crushing or disintegrating disease of the marrow of bones.

b. Secondary diseases *produced by an influence upon the nervous system* comprise the so-called reflex neuroses. It is perhaps difficult in this group of secondary troubles to draw an absolute line of distinction between mere symptom and secondary neurosis, but too fine a distinction is of no practical account. For instance, we would ordinarily speak of cough as a mere symptom of disease of the respiratory passage, but if we encounter a case of distressing spasmodic cough due to a comparatively insignificant lesion like a shrunken tonsil, it is perhaps more practical to consider the coughing spells as a reflex neurosis, inasmuch as the lesion causing the reflex requires a certain combination of circumstances to produce this effect. It is altogether illogical however, to consider a neurosis like asthma a mere symptom of nasal disease, as it consists of an occurrence which results only occasionally from a combination of circumstances.

The clinicist uses the term reflex neurosis in too wide a sense. Physiologically we mean by a "reflex" the activity of centrifugal nerves in consequence of the stimulation of sensory nerves. Winking, for instance, is a reflex movement following irritation of the conjunctiva, and accordingly spasm of the lids caused by conjunctival disease may properly be called a reflex neurosis. But a neuralgia dependent on nasal disease is not a reflex at all, although often called so by clinicists. It would be better to limit the term reflex neurosis to motor or secretory activity and vascular changes induced in a reflex manner, and to call sensory disturbances due to peripheral disease, "sensory neuroses of peripheral origin."

Amongst the reflex neuroses, we encounter in the first place instances which are but the morbid exaggeration of normal reflexes. Thus, optic defects of the eye may cause tonic spasm of the ciliary muscle; conjunctival disease may be followed by blepharospasm. Nasal anomalies may induce sneezing fits and pharyngeal lesions spells of spasmodic cough. In other instances physiological reflexes may be exaggerated in extent as well as in intensity, as for instance when eyestrain or conjunctival disease results in twitching not merely of the lids, but of all facial muscle, amounting to facial chorea, or when pharyngeal irritation induces spasm of the larynx in the form of laryngismus stridulus.

But amongst the reflex neuroses we meet finally with occurrences which have either no physiological prototype at all or represent reflexes exaggerated beyond all resemblance to the normal condition. Types of these morbid reflexes are choreiform movements in consequence of ocular anomalies or naso-pharyngeal disease, asthma as the result of nasal affections and epileptoid convulsions from peripheral irritation, be it in the nose, in sensitive cicatrices or, most frequently of all—in the diseased intestinal tract. Some clinicists have refused to consider these instances as reflex neuroses, but their arguments are based on misconceptions. There is indeed a chorea which has no peripheral origin, but represents a disease of nerve centres. But if we encounter besides, cases of choreiform movements which can be stopped by the relief of morbid conditions in the eye or nose, we must consider those cases at least as of peripheral origin. Similarly, we cannot escape the conclusion that certain epileptiform convulsions, which cannot be distinguished clinically from genuine epilepsy, are of a reflex nature, if the successful treatment of morbid nasal or intestinal conditions puts an end to the occurrence of the spasms. But this observation in no way denies that real epilepsy is a disease of the central nervous system of different character. The same reasoning applies in asthma. Asthmatic attacks occur in bronchial, cardiac and renal diseases, but there are besides numerous instances of asthma which can be cured by the removal of nasal anomalies and which do not return except when the nasal disease relapses.

As other instances of reflex neuroses may be mentioned, vaso-motor disturbances in the skin, facial urticaria, and circumscribed cutaneous œdema in consequence of nasal irritation, the occurrence of exophthalmic goitre with cardiac palpitation likewise due to nasal disease.[1] Cardiac palpitation and other cardiac symptoms may also represent a reflex neurosis of intestinal origin.

Sensory neuroses of peripheral origin are illustrated by headaches due to eye strain and by neuralgia of nasal or dental origin. Periodic attacks of migraine are sometimes kept up by eye strain, sometimes by nasal irritation. Comparable to migraine is the so-called periodical visceral neuralgia of intestinal, ovarian, or Fallopian origin. Vertigo is not a rare secondary neurosis, the cause of which may be found in the eyes, the ears or the intestinal tract.

In all these instances of reflex and of sensory neuroses, the etiology can be considered as definitely proven only when we have succeeded in arresting the attacks by the cure, of the peripheral anamoly suspected to be their cause. This, of course, is not always possible, while we can benefit the patient, perhaps, by other modes of treatment, which, however useful, are not demonstrative of the peripheral origin of these secondary affections. Occasionally, however, we can get a confirmation of the view which attributes them to peripheral irritation, if we observe an unmistakable aggravation of the neurosis whenever the peripheral disease is aggravated.

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[1] There are six cases on record in which the symptoms of Graves Disease (Morbus Basedowii) were removed by the treatment of nasal anomalies—quoted by Muschold (Deutsche Medicinische Wochenshrift No. 5, 1892), who reports an instance.

A subject of great theoretical and practical interest is the study of the conditions which permit peripheral diseases to bring about the secondary neuroses. We will find in the first place, that in nearly all instances the peripheral anomaly or disease, has been of long standing, at least weeks, if not years, thus engendering an accumulating influence upon the nervous system. Perhaps the most notable exception to this rule are infantile convulsions of bowel origin. The irritation produced by the peripheral disease is not however, necessarily painful. In the case of nasal disease, the direct annoyance may indeed be so slight that it is overlooked by an unobserving patient, although even in that case, we can elicit the history of local symptoms by proper questions.

The occurrence of reflex neuroses depends furthermore on an abnormal condition of the central nervous system. For if, in a given case, the irritation of certain nerves can lead either to reflexes or to irradiating sensations, which do not follow the same irritation in normal subjects, we must conclude that the nerve centres are not in their proper physiological condition. This abnormal state of the nervous system in which stimulation of sensory nerves can extend into paths not normally open to it has been termed the neuropathic condition or taint. The name by itself explains nothing, but the condition cannot be ignored. The neuropathic tendency may result occasionally from the long continuance of the peripheral irritation, but as a rule, it depends largely on other factors. The frequent occurrence of reflex neuroses in different members of one family can be interpreted as an evidence of the possible hereditary transmission of the neuropathic tendency. But while acknowledging this fact, we must not overlook that we do not know the anatomical or nutritive peculiarities upon which it depends. To state that a condition of the nervous system is hereditary expresses the result of observation, but does not explain it.

The neuropathic condition may also be the result of preceding diseases. Anæmia and chlorosis are frequent conditions in the course of which peripheral irritations lead to consecutive neuroses. Similarly do we find the tendency to reflex neuroses increased by the influence of typhoid fever and measles and other infections upon the nervous system. In fact any influences like steady overwork, continued mental worry, exhausting sexual excesses, can produce in the nervous system changes which permit the occurrence of reflex neuroses. These considerations explain why a cure can sometimes be effected in reflex or sensory neuroses of peripheral origin, without removal of the peripheral cause. Any measures which can restore the normal state of the brain, or which can bring the resistance to the extension of nerve stimulation up to par, may render the peripheral cause inoperative. This possibility of various modes of successful cure can be illustrated, for instance, by the treatment of headaches from eye strain. The use of proper glasses gives in such cases absolute relief as long as the glasses are worn, but this is a correction of the evil, and not an ideal cure. In some instances, however, we can improve the condition of the nervous system by rest, out door life, iron if needed, and similar measures, to such an extent, that even without glasses the headaches or other neuroses present cease, while the local fatigue of the eye persists, though without secondary disturbances. The symptom proper of over-exertion of the ciliary muscle, the feeling of fatigue in the eyes is, however, not influenced by such treatment, but only by suitable glasses.

The tendency of a peripheral irritation to induce secondary neuroses is furthermore increased by the simultaneous influence upon the nervous system of irritation in different organs. This is illustrated by the liability to reflex neuroses during dentition and pregnancy. If infantile convulsions occur at the time of teething their real cause is usually some irritation, perhaps more often in the bowels than in any other part of the body. But the irritation proceeding from the gums is an important determining condition. Similarly, the different reflex and sensory neuroses which may complicate pregnancy can often be traced to special peripheral causes which would fail to produce this result were it not for the concomitant pelvic irritation. The influence of simultaneous peripheral disturbances in different organs can be observed sometimes in the production of asthma, according to my personal experiences in several instances of asthma, the nasal origin of which was shown both by the nasal symptoms preceding the attack and by the ultimate cure by means of nasal treatment. The asthmatic spells however, occurred in these patients, mainly during the time of intestinal derangement, and the history up to the time of final cure showed that the liability to asthma was always diminished by attention to the intestinal condition.

c. Secondary diseases of *chemical origin* comprise the various instances of poisoning by toxic agents produced within the body. By some authors, these occurrences are termed auto-genetic poisoning. The best known instance of such affections is post-diphtheritic paralysis. Diphtheria is very often followed by paralysis of the ciliary muscle, less often by paralysis of the soft palate and sometimes by pareses of other motor and sensory nerves. Autopsies have shown the cause to be a neuritis, but we do not know yet whether there is an organic lesion in all cases. Similar paralyses follow the experimental injections of diphtheria tox-albumin in animals. We must, therefore, attribute the post-diphtheretic paralysis to the retention of poisons produced by the diphtheria bacilli in the body. Why this paralysis only occurs in some of the instances of diphtheria and not in all, and what the conditions are which limit the toxic influence to certain nerves is as yet unknown. The occurrence of multiple neuritis, during or subsequent to various other infectious diseases, or in patients with cancer, is probably also referable to auto-genetic poisons. It is to-day an open question whether locomotor ataxia has not a similar origin. The disease is preceded by syphilis in so large a proportion of instances that a relation to the syphilitic virus is unmistakable. Yet ataxia has neither the characteristic lesions of syphilis nor is it ordinarily influenced by anti-syphilitic treatment. It is therefore not improbable that the sclerosis of the nervous system is the result of some toxic substance produced in the body under the influence of the syphilis parasite. But since ataxia does occur sometimes, though rarely, in non-syphilitic persons it seems that its hypothetic poison may also have a different origin.

Another instance of a secondary affection produced, in a chemical way, is the coma which sometimes causes the death of diabetic patients. It was formerly attributed to the occurrence of acetone in the blood but is probably due to other poisoning substances, which have not yet been determined with certainty. Auto-genetic poisoning is furthermore illustrated by uræmia and puerperal eclampsia but neither the chemical factors nor all the conditions, which lead to the poisoning, are as yet fully known.

It is not improbable that various forms of kidney disease, especially the lesions following some infections, are the result of autogenetic poisons. At any rate, diligent research has failed to detect parasites in diseased kidneys in so many instances,[2] that a chemical origin of such lesions seems very plausible.

d. The statement that certain secondary affections may be produced *through nutritive influences*, expresses some facts which we cannot at present explain. Of course, nutritive processes are largely based on chemical occurrences, but our means of analyzing these occurrences are as yet insufficient. Hence the term "nutritive influence" is a vague, collective heading for activities that are not fully understood. An instance of a secondary disease brought about in a nutritive way is the so-called cachexia strumipriva. Total extirpation of the thyroid gland is frequently followed by mental degeneration, nervous symptoms and nutritive disturbance, known as cachexia strumipriva. Surgical experience, as well as experimentation upon animals, has shown that the loss of the thyroid gland is the cause of these morbid phenomena, but in what way they are produced is a matter of conjecture. The resemblance between cachexia strumipriva on the one hand, and the diseases known as myxœdema and cretinism on the other hand, strongly suggests that these affections also are secondary consequences of interference with the function of the thyroid gland, which view is confirmed by the invariable diseased condition of this organ in the last mentioned affections.

Secondary affections of nutritive origin are further illustrated by some forms of diabetes. This disease does not represent an etiological unity. Transient forms of it are probably due to vascular disturbances in the liver under the influence of the nervous system. But even amongst the permanent and incurable cases of diabetes, we find two distinct varieties, viz.: those with disease of the pancreas, and those with healthy pancreatic gland. The researches of Mering and Minkowsky (confirmed by Lepine), have taught that complete extirpation of the pancreas in animals causes permanent diabetes. On the basis of these data we must, therefore, regard certain instances of diabetes as secondary consequences of pancreatic degeneration.

Another illustration of secondary diseases produced through nutritive disturbances is furnished by certain retinal lesions, usually called retinitis. The retinal lesions observed frequently in the course of chronic nephritis have been found by Duke Carl of Bavaria to be the consequence of inflammation and hyaline degeneration of the intra-ocular blood-vessels. That morbid changes occur in blood-vessels in connection with some renal diseases, had been established by various observers. The similarity in the pathology of the so-called retinitis in leucocythæmia and in diabetes with that of albuminuric retinitis, suggests that all these forms represent secondary diseases, produced through nutritive changes in the blood-vessels.

Secondary diseases produced through nutritive disturbances are met with also in many forms of nervous disease. An atrophy of parts dependent on nerve lesions, and invariably accompanying the same, should of course not be called a secondary disease, but is really a symptom of the original affection; as, for instance, muscular atrophy dependent on disease of the anterior gray horns of the spinal cord. But secondary changes which occur capriciously, so to speak, in the course of nervous diseases; that is to say, which depend on accidental concomitant conditions, belong to this etiological group. The joint affections in locomotor ataxia, and the atrophic degeneration of hair, skin or nails as the consequence of lesions of nerves, may be quoted as illustrations.

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III. *Anomalies.*—In order to complete our etiological survey we must consider, not alone the active diseases of primary and secondary origin, but also include those ailments which consist in mere structural deviations. The disturbances which from an etiological point of view can be called anomalies, do not represent a reaction of the system to a still active injurious influence, but constitute the ultimate result of former abnormal influences. Anomalies may thus have been produced by former diseases of tissue-productive or destructive character, or they may have resulted from influences which were not of sufficient intensity to throw out of gear the physiological mechanism and which, hence, did not cause disease, but led to structural deformity.

The origin of anomalies in consequence of traumatism is illustrated by deformities due to the healing of fractured bones or cartilages with faulty position of the fragments. Destructive diseases cause cicatrices, the subsequent shrinkage of which, as in the form of a urethral stricture, furnishes many familiar instances of important anomalies. The deformity of the cardiac valves in consequence of endocarditis is another example of a lesion the result of a former disease followed by interstitial shrinkage. In other instances anomalies may constitute, not a deficiency, but an excess of tissue. Personal studies have convinced me that the hypertrophy of the tonsils, especially observable in the pharyngeal tonsil, does not represent a disease but an anomaly. The enlargement of the glandular tissue is not a continuous process, but occurs to a greater or less extent in the course of every acute inflammation of the nasal cavity, probably as the result of absorption of toxic substances through the lymph vessels. As soon as the attack of coryza has passed off, the amount of adenoid tissue at the roof of the pharynx and in the tonsils remains unchanged until the next inflammatory attack or until slow involution occurs in consequence of advancing age.

From an etiological point of view some forms of benign tumors, such as fibromata, myomata and lipomata, may also be regarded, not as diseases, but as anomalies, the results of past influences. The tissue constituting such tumors is in no sense diseased, and abnormal only in topography. The tumor, therefore, is a mere structural deviation, of pathological importance only by reason of its mechanical presence. Even while the benign tumors are in the process of growth, the abnormal tissue proliferation is limited to the border of the new growth, and does not extend into the tumor itself. We do not, however, as yet know the causes leading to this tissue proliferation. While we can thus classify as mere anomalies those tumors which grow only by peripheral accretion but do not extend into the surrounding tissue, we cannot maintain such a view as regards any spreading or malignant growth, but must consider these as active diseases.

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[2] Fuerbringer in Diphtheria. Virchow's Archiv. Bd. 91, p. 385.

As before stated, anomalies of structure may be occasioned also by influences which do not throw out of gear the physiological mechanism, and hence are insufficient to produce real disease. Examples of this kind are the deformities of bones and joints from mechanical causes, for instance lateral spinal curvature. Finally, there remains a large array of structural anomalies due to interferences with the normal growth. As to the etiology of this field we are as yet in complete ignorance. Such anomalies due to retarded, or in some cases excessive growth, occur mainly during intra-uterine life. Other instances, however, are also produced during the earlier periods of life, while the processes of growth are still active. As examples may be quoted the irregular shape of the cornea causing astigmatism, the arrested growth of the eyeball in hypermetropia, or its excessive elongation in the minor degrees of myopia.

REPORT OF A FEW CASES OF FOREIGN BODIES IN THE STOMACH WHICH HAVE COME UNDER MY OBSERVATION IN THE PAST TWENTY YEARS.

BY W. T. KENDALL, M.D.,
OF MERIDIAN, MISS.

The first case was one in the larynx; a young man while running through a field struck a dry stalk of cockle burr and one burr flew in his mouth and in deep inspiration lodged in the lower larynx. I was called to see him at once; arriving at the patient's house late at night and not having a pair of laryngeal angle forceps in the country at that time, and being unable to do anything with a pair of ordinary forceps, I made an instrument out of a piece of white oak split, but found it impossible to dislocate the burr with the means at hand. The patient was breathing very well, so I concluded to wait until morning. After a good night's rest the patient experienced very little inconvenience from the burr. I made one more effort to dislocate it with my improvised instrument and not accomplishing anything I concluded to resort to other means, so gave him slippery elm mucilage in moderate quantities during the day, and as I expected, or hoped, the meshes of the burr filled so completely in a few days that it was dislodged and the patient in a fit of coughing spit it out; he experienced no further trouble.

Case 2.—Little Bessie C., 10 months old, while crawling on the floor, found a large round head tack and swallowed it. I saw the little patient a short while after the accident had happened, but could not find it as it had passed from view, having examined for it with a laryngoscope. I concluded to try the mucilage treatment, hence ordered a teaspoonful of mucilage of acacia given the child every two or three hours. In about thirty-six hours the tack passed out completely covered with the mucilage. There was no further trouble.

Case 3.—Lottie Mason, age two years, while playing with a breast pin (such as children frequently wear, about two inches long, marked "baby") put it in her mouth and accidentally swallowed it. Her father lived some distance in the country. He came for me. I ordered the mucilage treatment and in thirty-six or forty hours the pin made its appearance. The child was all right in a few hours and had no further trouble.

Case 4.—At the East Mississippi Insane Ayslum, about five years since, a three months old child of Mr. Burbe (the baker of the institution) was lying on the floor on its back; its little brother came in the room with a three inch screw, put it in the baby's mouth and pushed it down its throat. The mother saw the act but was too late to prevent it. She at once sent for Dr. Johnson, assistant surgeon of the Institution, who at once telephoned for me to come and bring forceps to extricate it, but on my arrival it could not be found. Dr. Johnson suggested that we give the patient a large dose of castor oil, to which I kindly objected upon its producing too great peristaltic movement and thus be in danger of perforation of the bowels in its passage. I suggested the mucilage acacia treatment which produced a most happy result, the screw having passed out in about thirty-six hours surrounded by its safeguard, the mucilage.

I merely write about this simple treatment of foreign bodies in the stomach in order to show how easy it is to rid the system of them by simple medical treatment instead of major surgical operations. A foreign body is a nidus around which the mucilage readily accumulates, and thus prevents any danger to the intestinal track.

SOCIETY PROCEEDINGS.

Chicago Medico-Legal Society.

March 5, 1892.

(*Concluded from page 497—Discussion on Papers of Drs. Dewey and Moyer.*)

Dr. Marshall D. Ewell: In an experience of about twenty-five years at the bar and in the study of law, I can say that I have never heard so satisfactory a presentation of this subject. It has rarely been my experience to see medical men who by education were fitted to, or at least did, express themselves upon legal subjects in a manner that seemed acceptable to my judgment. I do not wish to make any criticism of the medical profession, because among them are some of my best friends, men for whose learning and experience I have the greatest respect; but after some experience with the medical profession, I am able to state with considerable clearness that the methods of study in the two sciences of law and medicine are so radically different that the lawyer is, as a rule, unqualified to investigate a medical subject, and, on the other hand, medical men are, as a rule, decidedly unqualified to investigate a legal topic. I think this is made very apparent in the paper by the very learned gentleman which was read first. I have a very great admiration for his experience, but I cannot commend his law.

I presume that in nearly every State in this Union there is some method by which the question of insanity can be investigated prior to and independent of the equities and intents of the case. That fact seems to have been entirely overlooked by our medical brethren. It would be well, in my judgment, for gentlemen who assume to criticise the law and administration of justice, to be thoroughly informed as to what is law, and not assume rules as non-existent which in fact do exist. There is no doubt whatever, as suggested by Dr. Moyer, that the present system of expert evidence is faulty—so is the present administration of justice generally. Medical gentlemen who propose remedies shut their eyes entirely to the fact that the Continental system, which as a rule meets their approval, is one that, with the system of administering justice under the common law, cannot under our Constitution be put in use, at any rate not without incurring greater dangers than are, in my judgment, incurred by the present system, which if it leads to any danger whatever, errs on the side of mercy to the criminal. It does not tend, as a rule, it seems to me, to convict insane men, but, on the other hand, to acquit some guilty men. Not knowing the precise position the gentlemen would take, I have been unable to meet the arguments advanced, except as they suggest themselves to me this evening, but I say it has not occurred to these gentlemen that the systems of justice administered on the Continent and in England are quite different, and that the evils which would be incurred by adopting the system recommended by Dr. Dewey would perhaps be greater than those of the present system. In my judgment, the evils resulting from the centralization of power in the hands of a few men who are appointed as they would necessarily be in this country, are greater than to trust to the intelligence of the average jury. If I am correctly informed, this system does not operate well in Continental Europe. Even those men who are supposed to embody the acme of wisdom of the medical profession have made many notorious mistakes. That they make as many mistakes as are made by the average jury I should be unwilling to admit, but the system is by no means perfect.

Again, under our Constitutional system, every person accused of crime has a right to be confronted by his witnesses in open court, and has a right to have their truth sifted by cross-examination. In that view of the case it would be impossible, in a criminal case, to have reference to a master for the purpose of obtaining the facts; indeed, reference to a master would be simply postponing the difficulty, and would by no means remove it. The trouble inheres not only in the tribunal, but in the subject-matter. Every earthly tribunal, called as it is to administer justice according to the probability of the case, must make mistakes. The laws of evidence in use in human tribunals do not seek to establish mathematical truth. Every case is decided upon the greater or less probability, so that there is a chance for error not only in the tribunal, but in the testimony itself. Now as to the testimony: The facts concerning which experts testify are notoriously uncertain and doubtful, there can be no doubt of that, any candid observer will admit the truth of the statement. The facts being uncertain, the witnesses who depose to those facts are also uncertain. but so far as my observation goes, they are no more uncertain than the witnesses who depose to ordinary facts of observation. Let half a dozen witnesses depose to a fact, separate them and call them into a court of justice, and compel them under oath to narrate that fact, and see how much they will disagree, and yet within the limits of honesty. The gentlemen who desire greater certainty in the administration of criminal law by the aid of expert testimony, certainly desire that which ought to be accomplished if it is possible, but they should remember that the truths investigated in the courts of justice are not mathematical nor scientific truths, the certainty of which is beyond question. In many instances, perhaps in the majority, there may be room for an honest difference of opinion, and opinions may be about evenly balanced; it is not infrequently the case that the opinion of competent observers may be radically different, and both sets of observers may be equally honest.

With respect to cross-examinations, I have never yet seen a physician on the witness stand under cross-examination by an attorney who had thoroughly studied the subject, where the witness had not sustained himself as well as he ought, that he was not in favor of a commission and a different system of administering justice; I have observed that repeatedly. I remember some years ago, a very distinguished alienist came into a store in which I happened to be purchasing a book. He was in the greatest state of trepidation and nervousness, it seemed to me he almost had paralysis agitans, and upon inquiry I found that he had been on the witness stand for two or three hours under an able cross-examiner. The physician who studies his case, who is conscientious and commits himself to no doubtful theory, need have no fear of cross-examination. In my judgment, cross-examination in open court in the presence of the jury is the greatest test of proof known to the law, and for one, I should never be willing to give my sanction to any system which would obviate the necessity or do away with the right of cross-examination. Lawyers are frequently at fault in this matter, they are human beings as well as the doctors, but as a rule they try to prepare themselves as well as they can, although they are not always well prepared. A man who goes upon the witness stand and testifies to the truth and nothing but the truth, so far as his opinion is concerned, would very much prefer to be cross-examined by a lawyer who has studied the subject than by one who does not understand the first principles of it. Now and then, it is true, lawyers do abuse cross-examinations, but the privilege is under the control of the court, and I doubt whether witnesses are treated with very great brutality by the average lawyer, and certainly the witness who is prepared ought to be able to take care of himself before any lawyer; if not, he should not go on the stand.

One other point is the fact that the law proceeds by general rule. It is impossible for the law to lay down one rule for one case and another rule for another case, as you can in the treatment of disease, but the rights of all must be adjudicated by general rules. These general rules sometimes lead to hardship, it is inevitable that they must do so. but the security of life and property are much better effected by just general rules than by the variation of a rule to suit the equities of the case. I had not the slightest idea I was on the program until I came here this evening, and I ask your pardon for the rambling way in which I have presented this important subject. It is important for the reasons already stated, that in many cases opinion evidence is the only evidence we have, and without it justice could not be administered at all.

Mr. D. J. Weil: I was not aware until I saw my name on the postal card that I would be expected to take part in this discussion, and the Appellate Court in a spirit of mistaken kindness, having put me on a committee to examine students on application for admission to the bar, I am not in a condition of mentality which will enable me to present this question from the lawyer's standpoint in the manner it deserves. On the contrary, I find myself very much in the condition of the old preacher in Iowa. who, on being caught making a good many misstatements in the course of his sermon, which he detected by the smiles of his auditors, very frankly confessed that it was difficult to convey to others ideas of which he was not himself possessed, and so with only a fragmentary recollection of various instances that might be of interest to my listeners, I find myself utterly unable to mould into a homogeneous mass, those instances which in themselves and considered properly in relation to each other, ought to be of interest. I do not share the somewhat sardonic opinion expressed by a New York judge who divided unreliable witnesses into three classes: the first as liars, the second as blank liars, and the third as experts. On the contrary, I think the very fact that we call upon experts to the extent that we do, not only in medical lines but in all branches of mechanics and commercial life indicates clearly that their use grows out of our advanced and advancing civilization. The tendency nowadays as well in the learned professions as in the other walks of life is in the direction of concentration. People are becoming more skilled in their particular lines; the lawyer's profession is specialized; there are very few in the profession who can truly bear the name of being good general lawyers. This is done from purely pecuniary motives, which actuates them to put money in their purse when they can, and so with the medical profession. The specialist is the one who makes money, and the general practitioner is rapidly giving way to the specialist. Hence it is that in our every day experience we call upon specialists when some disease afflicts us. So in the complex civilization in which we find ourselves, especially in city life, we find it every day more necessary to call upon experts to aid us, and why not in the administration of justice. It seems to me too, that we overlook one very important fact, that is that experts are called every day for the witness stands in o[illegible] insanitary experts, not always experts in [illegible] to the value of property, etc., and their evidence cuts a very important figure in the administration of justic. But when we see a miscarriage of justice, our attention is arrested by it and we are prone to condemn the expert because justice has gone wrong in one particular case. It reminds me very much of our daily experience, we go along the streets of the city, and we see thousands upon thousands of sober people and our attention is not arrested by them,but we see one drunken person on the street,and the fact that he is intoxicated fixes itself upon our minds, and we remember him and lose sight of all the sober people we have met; and so in the administration of justice, in thousands of cases in which experts testify no one can gainsay that justice is accomplished, but from the one case where justice miscarries we draw the conclusion that expert testimony is objectionable.

As to the criticism made on the examination by a lawyer of experts on the witness stand, there is too much truth in it. The fact is the average lawyer does not qualify himself to examine an expert, he qualifies himself only sufficiently to conceal his own ignorance; his selfishness is of that order which leads him so far as his own personality is concerned, to exhibit himself to the best advantage before the jury. The modest expert on the stand with the brilliant lawyer before him stands at a disadvantage and the jury is more likely to be swayed by the eloquence of the lawyer than the facts testified to by the expert.

As I said, I have had no time to prepare for a proper discussion of this subject, but I am deeply interested in the topic, as I am brought into contact with it day after day, but from the fact that it is easy to talk a great deal and difficult to say much, I prefer that the further discussion shall be left to others better qualified by experience and observation than I am to testify to what they have heard and known.

Judge Horton: The Doctor's paper brings to my mind several practical illustrations of expert testimony. One case I recall where an alienist was examining into the sanity of a young man who had been shunting trains off the main track to a sidetrack. He had given a long explanation, with all the technical terms, more than I could understand and I fancy more than the jury could understand. Out of the confusion, the court asked him if he knew the difference between right and wrong, and he replied that there was no such thing as, right and wrong. that that theory was exploded long ago. So long as you have such alienists as that their testimony will be in disrepute in the courts. I know of no use for courts if there is no difference between right and wrong.

One remark made by Mr. Weil recalls to my mind a case in which there was expert testimony as to the value of real estate. Talk about doctors disagreeing, it was the most marvelous testimony I ever heard of. It was a piece of property condemned by the South Park Commissioners and one of our most able and wealthy old citizens swore that it was not worth a dollar, and demonstrated it by what they supposed the property would be worth in ten or twenty years, adding the taxes and special assessments of the South Park, and he figured that it was not worth a cent, while others testified that it was worth six thousand dollars per acre. I never heard doctors disagree more than that.

Men are often called upon to give expert testimony who are not in fact called as experts but because they have been forced to know the circumstances; for instance, in the case of accidents where physicians are called, or something of that kind. They are not in fact experts, and I fancy it is the demonstrated lack of wisdom and common sense often exhibited in such cases that has brought reproach upon so-called expert testimony. I recall an accident damage case where the plaintiff had been crushed by the backing of a heavy wagon against him, pressing the chest together, and he was prosecuting for damages. The physician who had been called to see him was necessarily called as an expert, for he examined the man and was the only one who knew exactly what the plaintiff's condition was. In examining that witness, after he had given his direct testimony, in which he stated that one or two of the ribs were broken loose from the backbone, I don't remember which rib, but at that time I was posted on the subject—I said, "Doctor, in making an examination how do you tell when a rib is broken?" He replied, "You put your hand where you suppose the fracture is, and bending in some other place you can feel the fracture." The rib he located was up under the shoulder blade beneath that big muscle and he felt the fracture when he pressed his finger in front. It is that kind of expert testimony which brings disrepute. I believe that the man who is hired as an expert, is hired to testify to some particular thing in nine cases out of ten; a defendant does not hire an expert to testify against him. This is the root of a great deal of difficulty with expert testimony. Take patent cases, they are pretty much all tried on expert testimony, four are allowed on each side, and it is practically a sworn argument, that is about what it amounts to. Each man is hired as an expert in a particular department of mechanics or science and the one who can make the best sworn argument is the best expert, too often, but that is not always the case.

Dr. J. G. Kiernan: It is unnecessary to say that I have been, so far as newspaper notoriety is concerned, one of the best advertised experts in Chicago. I have noticed one fact about newspaper notoriety which is an important feature in these cases: I have appeared for the prosecution in cases where a sham plea of insanity was introduced to give the jury a chance to acquit people whom public sympathy had exonerated, and the experts for the prosecution in these instances are always abused by the newspapers. I remember a case where experts appeared against a certain woman who shot a lawyer for doing something, which was probably within the limits of his profession, and had made him an acute melancholiac. She was tried for assault with attempt to kill. In that case I was approached by both sides, on behalf of the defense and on behalf of the prosecution. I told the defense there was no evidence that the woman was insane, and they admitted it, and then went out and procured several witnesses with whom to make a sham plea of insanity. But the jury was wiser than the defense, they acquitted the woman but refused to say that she was insane. That case was tried largely and almost completely by the newspapers, and some fellow, writing at the reduced rates of the bureau in the newspaper profession, obtained an extra five dollars by abusing the experts who were testifying to medical facts. These things have played an important part not only in so-called defense in expert testimony, but also in legal decisions. It is a fact that with the infamous right and wrong test, mob law forces a decision. In New York that same right and wrong test was foisted on the criminal code by David Dudley Field; he perhaps appreciates the value of it just now. If we go through the criminal decisions of the courts in insanity cases we invariably find that the judge, having the most prejudice against expert test-evidence, is almost invariably pandering to mob law. Judge Noah Davis did that in a charge he made to the jury in the decision of a case in Washington. He is the gentleman who was referred to as making the assertion about liars, etc.

In regard to the workings of the European system; the case of ————, who attempted to kill the King of Italy, was tried by a commission and they emphatically cleared him. In the case of ————, who was released from the asylum as sane, after word was sent all over the country that he was a sane man confined in a lunatic asylum, he was sent travelling over the country accompanied by a physician and two attendants. But the book which he published, would be sufficient to convince any expert that the man was suffering from chronic insanity. The Baron was released by the same procedure in France, and his property went to the whirlwinds in a very short time, and it was necessary to put him under restraint again. These are the workings of the Continental system which is so much boasted of.

I agree heartily and thoroughly with Dr. Moyer and Dr. Ewell.

One point was suggested by Dr. Horton's remark in regard to questions of fact. I am of the opinion that immediate improvement could be made by confining the expert totally to opinion evidence, and compelling some one else to furnish the fact evidence. I think that would be an improvement on the present system; the expert could then state his opinion on the facts fully and truthfully. I had an experience to-day of that kind; I was asked to examine a case and formed an opinion totally and diametrically opposite to that of the man who was trying the case; he will not now have an expert, but will try it on general principles. I think this case could be much more clearly presented to the jury by a person who had never seen the patient before.

Judge Horton's rib story reminds me that I was once indicted for murder, but the indictment was never turned in, on the testimony of an expert gentleman, who testified to the fracture of the twelfth rib (I will say for the information of those not posted on this subject, that this rib is 3½ inches long). He stated that this rib was fractured 7½ inches from the tip and 3 inches from the backbone, and that that mysterious fracture caused death.

Mr. Henry L. Tolman: Mr. President, I agree with Dr. Moyer, in his talk to medical experts, almost entirely. Dr. Ewell is probably in accordance with the general subject. I think there is nothing to be said as to the necessity for experts, the development of science at the present day makes it impossible to cover more than a single branch, and the limitation must be constantly met. I cannot agree, however, with the gentlemen that the present system is so right that no improvement can be made in the selection of experts. As we know, in ancient times under the Roman law the persons best acquainted with the facts were selected to pass upon the same. This is true to a certain extent in France, and it is carried still further in the German law. While Dr. Kiernan has shown us where errors have been made and abuses committed in some cases, it is not fair to bring out these few cases and apply them to all, or make any general deduction from them. The tendency has been, very often, to go as far as can be under the present system of law, in that direction. A case has been recently reported in one of the photographic journals of a celebrated chemist who was employed by permission of the parties to make an estimate of the damages a company had suffered, chemical losses in a case of nuisance against the photographic company. This principle has been applied in many instances in this city, but the trouble is that under our present system there is no way of enforcing it, and when one party selects a competent person another will find objections. But to my personal knowledge there have been occasional instances where judges have selected a person, both in medical and other cases, to make examinations, and have acted upon their report. I know of one case where a verdict was set aside by the judge on the expert's opinion, on a motion for new trial in a jury case, and I know of one or two chancery cases. I think under our law we can go still further, there are what we call claim issues out of chancery court where special questions cannot be decided by the jury, and it seems to me the law is broad enough to allow them to be decided by experts. The human mind, it seems to me, is sensibly or insensibly affected by having a series of facts put before it, so that the natural mental balance of a man may be upset even though he desires to preserve it. I think it would be a material advantage to further, as far as we could, either by legislative enactment or by law, the decision of these questions—not always medical—by persons appointed who have no bias whatever, so that they can go to a case and hear the testimony or have hypothetical statements put to them, and form a conclusion.

As to medical testimony, about which there seems to be more difficulty than any other class; I do not see how it can be less when we consider the extraordinary difficulties under which they labor, the intricate machine they have to investigate, the extraordinary working of internal disease to be judged of by external manifestations, especially mental disease. And it seems to me that the obliquy under which they apparently labor to some extent, and the objections made to them is because they are not allowed under the law the opportunity of a statement of all the facts. I have had occasion to listen to a great many of these expert cases, especially medical cases, where a statement is made that does not embody all the facts on which a decision can be made, and when the medical man objects, he is forced to say as far as he can, or as near as he knows. Now it is very rarely that a question involving insanity can be so stated by a non-professional man as to embrace all of the necessary factors on which a medical man can draw a conclusion.

As to general rules, they seem to me sufficient under our present laws, and if not we should have special rules for this class of testimony; it is growing in importance and it will always be with us, and instead of deprecating it and attempting, as many judges do, to get along without expert testimony, the better way is to meet it frankly and fairly and either by the legislature or the judiciary make rules fitting our laws to advancing civilization. Where it has been tried, in New York, Iowa and Minnesota where the law in regard to handwriting has been enlarged, the tendency to admit expert testimony of any kind has been increased. In New York within the last year the law has been enlarged in one respect beyond that which exists in England. We are putting ourselves in opposition to the tendency of affairs when we attempt to belittle it or try to reduce it to rules which were ample two or three hundred years ago but are inadequate to the needs of the present time.

As to the theory of insanity I rather side with Judge Horton on the question of right and wrong, although I don't believe it can always be urged as a ground on which to decide sanity or insanity. DR. ARCHIBALD CHURCH, Secr'y.

THE USE OF VASELINE IN CATHETERISM.—Dr. Hovotny, in *Budapest*, cautions against the use of vaseline for anointing catheters. He has observed that the vaseline thus introduced into the bladder changes, owing to its insolubility, into mass, which causes a urinary deposit on it. In one case the amount of detritus thus formed was 150 grains.—*Deutsche Med. Zeitung.*

Philadelphia County Medical Society.

March 23, 1892.

PRESIDENT JOHN B. ROBERTS IN THE CHAIR.

John S. Stewart, M.D., Ophthalmic Surgeon to the Philadelphia Lying-in Charity, read a paper entitled

THE USE OF GELATINE DISCS IN THE EYE.

Some excuse, perhaps, may be needed for bringing before this Society a subject which can be of practical interest to specialists of one department only; but it has occurred to me that a very brief account of one of the methods of applying medicaments to the eye, which, in my hands at least, has proven highly satisfactory, may be not altogether devoid of interest even to those engaged in other lines of work. I refer to the use of medicated gelatine discs, and in the present instance will consider only the advantages of applying homatropine and cocaine to the eye by this means. Four years ago, in an article on the subject "Homatropine," published in *The Medical News*, March 3, 1888, I called attention to the fact of having frequently observed an irritant action exerted on the deep structures of the eye by repeated applications of a watery solution of hydrobromate of homatropine. At that time it was my belief that this irritation was the principal cause why ametropia cannot be accurately estimated in very many cases where homatropine has been employed, and a considerable experience since in the use of watery solutions of the drug tends only to confirm this opinion. That irritation is produced in every instance by this method of practice, I do not pretend to say; but I am convinced that in all cases where there has been considerable and long-continued eye-strain, resulting from efforts to overcome particularly aggravating forms of refractive error, or where chorio-retinal irritation, due to other causes, exists, the homatropine as ordinarily used very often adds to the intra-ocular disturbance, and thereby interferes with attainment of the object for which it was employed, viz.: the accurate estimation of the refraction of the eye.

Another objection which I have to the use of watery solutions of this drug is that a large proportion of the effect is expended on the nasal and pharyngeal mucous tract rather than on the eye, as intended. There is no doubt in my own mind that both the irritant effects on the eye and the, at least, unpleasant ones on the nose and throat are directly due to the necessarily strong solutions employed—ranging, so far as I have been able to learn, from eight to twenty-four grains to the fluidounce—instilled in most instances a number of times within an hour.

It is claimed that medicated gelatine discs for ophthalmic use were first made in 1863 by Savory & Moore, of London; but, strangely enough, they have never been extensively used. About five months ago I began to try some of those made at the suggestion of Dr. C. A. Wood, of Chicago, by Messrs. Wyeth & Brother, of this city, and almost ever since, when I have had occasion to use homatropine alone or combined with cocaine for the purposes of refractive work, I have much preferred these discs to the watery solutions formerly used by myself.

On first thought it may seem unlikely that a single disc, containing one-fiftieth of a grain each of homatropine and cocaine, could exert sufficient influence on the accommodative power; but I have, in most instances at least, found as nearly complete paralysis of accommodation as I have ever been able to obtain with repeated instillations of two and three per cent. solutions of homatropine. The reason is not hard to discover. Absorption of the drug by the tissues of the eye takes place about as rapidly as the drug itself can be liberated by the dissolving of the gelatine; but when a drop of solution has been instilled, a large proportion necessarily escapes with the tears, or, if it does not get away so quickly, is likely to produce in sensitive eyes the chorio-retinal irritation which so often interferes with obtaining the results for which the drug was used.

Very few of my patients who have had these discs in their eyes could detect any effect whatever in the nose or throat, and in these few instances the information was obtained only by questioning the patients on the subject.

In my practice at the present time, in all eyes suitable for the use of homatropine and requiring its use for the purposes of refraction, I am making use of discs containing one-fiftieth of a grain each of homatropine and cocaine—either the hydrobromate and muriate respectively, or the alkaloid of each. I have found it an advantage, but not always a necessity, in the case of most of my patients under twenty-five years of age, to insert a second disc of homatropine only (one-fiftieth of a grain) in each eye as soon as the first is entirely dissolved—usually in about ten minutes. A small camel's-hair brush moistened serves conveniently to convey the disc to the eye, and although it has been recommended to place the disc against the scleral conjunctiva—in the grasp of the lower lid—I much prefer raising the upper lid and inserting the disc beneath it, immediately above the outer canthus, then directing the patient to keep the lids lightly closed as in sleep, and to avoid winking until the discs are dissolved.

It has been urged against the use of the gelatine discs that the lids and eyes are thereby rendered very sticky and uncomfortable. My patients have not complained of this; but I think the annoyance was escaped, in large measure at least, by strictly following my injunction about keeping the eyes closed.

As to the reputed advantage of the combination of cocaine with homatropine, I have little to say. It is claimed, of course, that homatropine combined with cocaine dilates the pupil and paralyzes the accommodation more rapidly and effectively than homatropine alone, and that these results are more permanent. This seems usually to be the case; but cocaine is used by me in these cases because of the quieting effect which it produces on most eyes, thus tending, in some measure at least, to overcome the irritant effect of the homatropine, and at the same time to facilitate the measurement of the ametropia.

In conclusion, it should be added that on several occasions I have used the English preparation of Savory & Moore, of London; but there is no hesitation on my part in expressing a preference for the Wyeth discs.

G. E. De Schweinitz, M.D., Professor of Ophthalmology in the Philadelphia Polyclinic; lecturer on Medical Ophthalmoscopy, University of Pennsylvania; Surgeon to the Philadelphia Hospital, etc., read a paper entitled

SOME CASES OF OBSTRUCTIVE DISEASE OF THE LACHRYMAL PASSAGES AND THE ASSOCIATED INTRA-NASAL LESIONS.

The intimate relationship between diseases of the lachrymal apparatus—that is, of the drainage system of the eye—and various types of inflammatory changes in the nasal mucous membrane is an old story. Indeed, the close association of ocular and naso-pharyngeal disease is not limited to these conditions. The great majority of phlyctenular ophthalmias depend upon some type of rhinitis, and are often the direct outcome of adenoid growths in the pharynx. Many obscure symptoms which we are wont to describe under the general term asthenopia, have been shown to depend upon intra-nasal disease, and a variety of orbital, ocular, and post-ocular pains are frequently "referred pains;" that is, their origin is from some lesion within the nasal cavity, the frontal sinus, ethmoid cells, or antrum of Highmore. In fact, as Harrison Allen has remarked, a good deal of the success of treatment depends upon a proper attention "to the commonality of the various parts of the cephalic mucous membrane."

The following cases are reported, not because they illustrate new points, but because they emphasize some old ones, and still more because they emphasize that the cure of obstructive lachrymal disease is materially facilitated not merely by the ordinary measures adopted for rendering the passages patent, in association with what may be called routine intra-nasal treatment (for I take it no one attempts to treat lachrymal disease without due attention to the nasal mucous membrane), but that more radical measures are frequently of value when applied to the nasal chambers and the vault of the pharynx, which in the vast majority of cases are the regions primarily affected.

Case 1. Purulent dacryocystitis; traces of old rhinitis and abnormal shape of the lower turbinated bone.—D. D., a boy age seven years, reported for treatment November 3, 1890. Three years ago pus began to exude from the right punctum lachrymale, and in spite of treatment this condition has continued ever since. The boy was healthy in other respects; he had never suffered from measles nor scarlet fever; was free from the evidences of inherited syphilis, and had sustained no injury. His voice was slightly nasal in tone.

The lower canaliculus was slit, and a firm stricture was found at the beginning of the nasal duct. The probe was not forced; neither was the stricture incised.

The patient was referred to Dr. Alexander MacCoy for nasal examination, who reported as follows: "The right nostril shows an abnormal shape of the lower turbinated bone, also some evidence of a severe rhinitis during the past. I believe that the position and form of the lower turbinated body have had much to do with the disease of the duct on account of the obstruction to its entrance at its lower portion into the nasal chamber. The boy also has a pharyngeal tonsil, which obstructs the posterior nares somewhat." Dr. MacCoy undertook the treatment of the nasal condition, and after a few days the stricture was incised, the probe passed, and the usual treatment instituted. After the intra-nasal obstruction was removed the epiphora ceased, and has not reappeared.

I have referred to this case in a paper on the use of pyoktanin in dacryocystitis (*University Medical Magazine*, vol. iii, p 181) and may repeat that my colleague, Dr. Gould, as well as myself has had favorable effects from this drug in the treatment of unhealthy lachrymal secretions.

The case is now utilized, however, to illustrate what seems to me a very important point to which Dr. MacCoy calls attention in his report, namely, that although the stricture of the duct, which in this case existed high up, was penetrated and although the fluids and the probe passed readily, the epiphora continued because of the malposition of the turbinated bone. Indeed, this obstruction sometimes exists only in the form of a small flap of mucous membrane, which closes the entrance of the duct into the inferior meatus very much as a valve would do. This effectually prevents the drainage of the eye, and unless it is removed good results will not follow. In this particular instance it was very easy to see the obstruction by first passing a probe and then exposing the entrance of the duct into the meatus by means of a nasal speculum—a slight precaution which will often lead to the discovery of the cause of a persistent overflow of tears in spite of apparent permeability of the passages.

Case 2. Catarrhal dacryocystitis: bands of adhesion from the inferior turbinated body to the septum.—Ella H.; aged twenty-eight years, reported for treatment at the Philadelphia Polyclinic, October 24, 1891, on account of an inflammation of the right eye, which had existed for several days. There was a small abscess at the inner margin of the lower lid, with a fistulous communication into the lachrymal sac. A free muco-purulent secretion distended the sac in the form of an ordinary mucocele. The canaliculus had been slit at some previous time, but a probe did not pass readily.

She was referred to the throat department, and examined by Drs. Arthur Watson and Walter Freeman, who reported as follows: "Atrophy of both inferior turbinates; unable to obtain a posterior view; former ulceration of the posterior wall of the pharynx; bands of adhesion from the inferior turbinates to the septum; also one from the middle turbinate to the septum on the right side."

Even in the absence of definite history the pharyngeal condition seemed to indicate syphilis. The patient was ordered an astringent lotion, given potassium iodide and bichloride of mercury, and referred to the throat department for treatment. In January of this year an operation was made upon the lower turbinated bone, and the condition has improved without the passage of probes, the secretion and the epiphora having materially lessened.[1]

This case, it seems, illustrates the ordinary intra-nasal lesions which were evidently at the bottom of the lachrymal trouble, and is further interesting because these lesions gave confirmatory evidence of the syphilitic condition, so much so that relief was facilitated by the proper constitutional remedies.

Case 3. Lachrymal abscess; spur on the septum opposite the middle turbinated bone; chronic pharyngitis.—Sarah S., aged forty-five years, reported for treatment at the Philadelphia Polyclinic, November 24, 1891. In April, 1891, epiphora began in the left eye, for which she seems to have undergone no treatment. It continued until about one week ago, when suppuration of the lachrymal sac took place. When she presented herself there was a very marked lachrymal abscess. The pus was evacuated by an external incision, the sac freely irrigated with an antiseptic fluid, and the patient referred to Drs. Watson and Freeman for an examination. They reported as follows: "On the left side there is a spur on the septum opposite the middle turbinated bone; also hypertrophy of the tissues. The turbinates are small. There is chronic pharyngitis, a thick phlegm covering the tissues."

Unfortunately this patient has failed to report with any regularity, and the ultimate result cannot be given. This example illustrates the course of so many of these cases, namely, a chronic pharyngitis and hypertrophy and inflammation of the intra-nasal mucous membrane; involvement of the lachrymo-nasal duct; epiphora, owing to an obstruction primarily from swelling of the mucous membrane, and later from the formation of a positive stricture. Under the influence of the pressure and of the stricture, the fluids of the conjunctival sac are not drained, but distending the lachrymal sac, become infective, an abscess forms, and the condition which has been described results.

Case 4. Epiphora; atrophic catarrh.—Jane C., aged 60 years, reported for treatment at the Philadelphia Polyclinic, November 14, 1891, complaining of pain in her eyes, constant epiphora, and inability to read on this account. There was considerable hypermetropia and some astigmatism, and, as epiphora is frequently caused by the strain of uncorrected ametropia, proper glasses were ordered, but the overflow of tears continued. Both canaliculi were then slit. There was narrowing of the ducts, but no stricture, and probe and fluids passed readily. The epiphora improved, but did not disappear.

She was referred to the throat department, and the following report was received: "There is an atrophic condition on both sides, and a spur on the septum on the right side, near the opening of the lachrymal duct, but it does not interfere. The closure is probably due to contraction from atrophic changes."

This is a good example of a very common condition, most frequent in elderly people, where there is neither disease of the sac, stricture of the duct, nor pressure from a spur, or hypertrophy of the turbinated bodies, but where the obstruction depends upon contraction from atrophic changes.

Case 5. Phlegmonous dacryocystitis; deflection of the septum; spur on the left side pressing on the inferior turbinated bone.—Matthew L., aged 27 years, presented himself for treatment on account of an extensive lachrymal abscess, with a small opening and widespread infiltration of the tissues, producing a large swelling involving the lower lid and cheek. The abscess was incised, the pus cavity freely washed out, and an antiseptic dressing applied. In a day or two the swelling had subsided, and nothing remained but a slight brawniness of the tissues and a fistulous opening at the point of incision. The canaliculus was slit, but all efforts to introduce the probe proved futile. The patient had been much exposed to weather; had a history of an old injury, but denied syphilis. The obstruction to the tear passages had existed since the early fall.

He was referred to the throat department, and the following report was received: "The septum is irregularly deviated in front; there is a spur on the left side pressing on the inferior turbinated body, which also contains an ulcer in its anterior portion."

He was warned that "catching cold," which would increase the nasal obstruction, would certainly bring about a relapse of the abscess. He went to work, however, and returned in a few days, with all of the lesions above described in a very much more aggravated state. The same treatment was instituted, and he was again referred to the throat department, and on the 23d of February the hypertrophy on the left side was removed. On the same day a probe was passed, and since this time its passage has been repeated. Epiphora still continues, but is decreasing day by day.

This example illustrates the mechanism of relapse in many of the tear-passage cases, in this instance producing a very serious phlegmonous inflammation. Under treatment and rest, sufficient drainage takes place to produce amelioration of the symptoms; then swelling from congestion, owing to exposure, is added to the organic obstruction already present, producing complete closure with an exacerbation such as has been detailed.

Case 6. Stricture of the nasal duct; moderate hypertrophy of the inferior turbinated on the left side, and a spur on the right side.—Bridget R., aged 50 years, applied for treatment to the throat department of the Philadelphia Polyclinic, and the following lesions were found: A moderate amount of hypertrophy of the left inferior turbinated near the nasal duct, and a spur on the septum of the right side, close to but not obstructing the opening of the duct. With these lesions there were epiphora, most marked in O. D., and slight lachrymal conjunctivitis. She had not been able for a number of months to use her eyes with any comfort. She was referred by Drs. Watson and Freeman to the eye department. The canaliculi were slit, and a stricture was found at the mouth of each sac. A No. 2 Bowman's probe was passed without difficulty.

It is evident that although there were lesions in the nasal passages, they were not obstructing the duct, but under the influence of the chronic nasal inflammation a stricture had formed in the lachrymal canal.

Case 7. Epiphora from swelling of the mucous membrane of the lachrymo-nasal duct; atrophic rhinitis.—A. K., an unmarried woman, aged 26 years, was referred to me by Dr. Ralph W. Seiss, on account of epiphora of the right eye, which had persisted for some time in spite of the nasal treatment. There was no swelling of the lachrymal sac, no catarrhal or purulent secretion, but simply an overflow of tears. The general health was good, the eyes not far from emmetropic, and there was neither asthenopia nor headache.

Dr. Seiss has kindly furnished the following report of the nasal lesions: "Atrophic rhinitis presenting the ordinary appearances of tissue destruction, combined with some odor and much secondary laryngo-bronchitis."

The canaliculus was slit, and a No. 3 Bowman's probe was passed without meeting a stricture, but with a resistance to its passage which is characteristic of obstruction from swelling of the mucous membrane. After the passage of this probe, the duct was irrigated on several successive days with a solution of boracic acid and common salt, without, however, passing the canula into the duct. The fluid trickled readily through the nose. The epiphora stopped after a few treatments, and has never returned, although many months have gone by since she originally reported.

This patient represents a common class of cases of epiphora associated with chronic inflammation of the nasopharynx. A somewhat similar inflammation occurs in the nasal duct, but does not produce a true stricture; the occlusion is from swelling, not from cicatricial changes. In many cases it is sufficient to do what was performed in this case; in others even milder measures suffice. Above all things, this is an example of a class of cases the successful treatment of which I have learned especially from Dr. Risley, by obeying the principle which he was wont to instil, not to be too ready to pass probes and canulas, lest their introduction scrape away some of the mucous membrane, and really do more harm than good. It is unnecessary to do more than medicate the swollen mucous membrane with any solution that is suitable; I like boracic acid and common salt very much.

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[1] Recently there has been a relapse in this case. Attention to treatment has not been regular.

Many more cases might be quoted, but these seven representatives of various classes are sufficient to illustrate the points which I desire to make:

1. A large class of cases exists, characterized chiefly by epiphora without catarrhal or purulent secretion, in which the obstruction in the lachrymo-nasal duct depends upon swelling of its mucous membrane, and not upon true stricture. The primary origin of these cases, in the great majority of instances, is a chronic or subacute nasal catarrh. The evident indication is the treatment of the latter condition and the medication of the swollen mucous membrane of the lachrymo-nasal duct, so that it may regain as nearly as possible its natural condition, which it will do without much instrumental interference—an interference that may of itself, if unskilfully performed, be the cause of a cicatrizing band that never originally existed. Case 7 of the series illustrates this class.

2. The life history, if I may so express myself, of many cases of obstructive disease of the lachrymo-nasal duct and the formation of a lachrymal abscess, is illustrated by cases 3 and 6. First, a chronic pharyngitis occurs; later, hypertrophy and inflammation of the intra-nasal mucous membrane, followed by swelling of the lining tissue of the lachrymal duct. Gradually cicatricial changes arise, and a true stricture is formed. The drainage of the conjunctival cul-de-sac ceases; the micrococci natural to the part, and those which readily find access to this region, permeate the contents of the lachrymal sac because this can no longer be emptied; the pathogenic microörganisms exercise their true function, and suppuration occurs.

3. A number of cases develop, chiefly in old people, in which there is epiphora, again without the presence of pus or muco-pus, depending upon obstruction in the lachrymal duct from atrophic changes, the whole being part of a similar atrophic process in the intra-nasal passages, and generally described under the term atrophic catarrh. The obstruction in these instances is not from swelling, not from stricture, but from contraction. Case 4 of the series is an example.

4. A very common cause of an exacerbation of lachrymal disease is due to the pressure of a hypertrophic turbinated body, or similar intra-nasal obstruction, which under treatment has gradually subsided, but which, owing to exposure, swells up again, and exercises its obstructing influence. At once there is occlusion of the lachrymal passages and recrudescence of the symptoms. The very serious nature of such cases is illustrated in case 5, of the series.

5. In every case of local disease the physician should be mindful of constitutional causes; the value of confirmatory evidence by pharyngeal and intra-nasal examination is illustrated in Case 2, an example of constitutional syphilis. Local treatment may be very necessary; local treatment without general medication is ineffectual.

6. Finally, I come to the class of cases in which there exist an obstruction at the intra-nasal end of the duct (it may be trivial), permeable by the fluids used in a syringe, but an impassable barrier to the outflow of tears. Even the slightest obstructions, under these circumstances, may defeat the most classical treatment of lachrymal disease. The ready detection of such a lesion is illustrated in Case 1, of the series.

It has not been my intention this evening to refer to what are the best means of treating lachrymal disease, except in so far as these are implied by the descriptions of the lesions which existed in the examples I have reported. Whether we believe that small or large probes should be passed; whether we class ourselves with those who believe that the probes should not be used at all; whether we are the advocates of this or that antiseptic and astringent fluid; whether we think that strictures should be incised or should not be incised, or whether we believe in the permanent wearing of styles or canulas, it is evident that the rational treatment of certain types of obstructive lachrymo-nasal disease must also include not alone the ordinary intra-nasal treatment with sprays and powders, but a systematic and thorough examination of the naso-pharynx, and, if necessary, the best operative interference known to intra-nasal surgery.

Discussion.

Dr. Edward Jackson: I have very little to add to this paper. We are not in a position to generalize widely on this subject, or determine how many cases, or what proportion of cases, belong to that group in which the obstruction comes originally from the nasal chambers. Certainly I have not studied enough of these cases to go farther than to simply consider individual instances and study the lessons that they seem to teach. A case that comes now to mind is one that was treated some years ago at the Polyclinic for lachrymal obstruction. He recovered, or at least got into such a good condition that he ceased to attend. Within a few months he returned to the clinic with a renewal of his epiphora, and on passing a probe, I found no obstruction until the lower end of the duct was reached. There the obstruction was very noticeable, although no great difficulty was experienced in passing the probe. He was referred to the nose and throat department, and there was found a cicatrix involving the lower end of the duct. Whether this cicatrix was connected with the former treatment, or whether it resulted from the original nasal lesion, I am not prepared to say. Its removal certainly removed the obstruction to the flow of tears.

I recall two cases in which the thickening of the mucous membrane at the opening of the duct into the nose was the sole cause of the epiphora. Probably, in the great majority of cases of lachrymal obstruction, the original obstruction has been seated at one end of the canal. I do not think that it is always, and perhaps not in the majority of cases, that the trouble begins at the lower end of the canal coming from the nasal chambers. Frequently it commences with the puncta. Some of the obstinate cases that have come to me, with a history of slitting up of the canaliculi, and long-continued treatment with probes without permanent benefit, have shown a grave error in the position of the incision into the canaliculus. Instead of on the conjunctival surface, the cut has been made on the upper edge of the lid, so that the tears could not get into the passage until they ran over the edge of the lid. These cases are liable to a return of the acute trouble, for if the normal flow of the fluid through the lachrymal sac and duct is not sustained, micrococci which enter find the conditions most favorable for free development and the setting up of pathological processes.

Dr. Samuel D. Risley: The facts which Dr. de Schweinitz has set forth in this admirably reported group of cases are of great practical importance, both to the ophthalmologist and those who treat the diseases of the naso-pharynx. The conditions so aptly described suggest many points of great importance. It recalls some of my early experiences in the treatment of lachrymal disease. I remember the case of a Mr. C., whom I had treated for a long time in 1879 for lachrymal retention unsuccessfully. There was no stricture of the duct other than that due to a more or less uniform thickening of the mucous membrane, but there was, nevertheless, more or less constant epiphora. Incidentally, he called my attention to some trouble with the nostril on the side of the affected tear-duct. I discovered a broad superficial ulcer underlying the anterior end of the inferior turbinated bone. This was speedily cured by a few applications, and his lachrymal trouble soon disappeared. This was the first inkling I had received of the important relation which might exist between certain cases of lachrymal disease and affections of the nasal passages. At that time, so far as I knew, literature was silent upon the subject. From that time to this it has been my uniform practice to carefully inspect the nose in every case of lachrymal disease.

Dr. de Schweinitz's paper is an admirable statement of facts, with which my own experience is strictly in accord, in a large group of cases suffering from this very troublesome and persistent affection. These facts explain why so many cases of epiphora present no marked stricture of the lachrymal duct. I have also had experiences the counterpart of that related by Dr. Jackson, where the probe was passed freely until the nasal end of the duct was reached, and there, meeting with resistance, if forced roughly into the nose, will cause bleeding from laceration of the inflamed and swollen mucous membrane, closing or blocking the nasal orifice of the canal.

Another practical bearing of these facts in ophthalmic surgery is, that since the lachrymal passages are liable to disease by extension upward from the nose, which furnishes such perfect conditions for the rapid development of micro-organisms, the nasal passages may become the source of infection for the 'eye itself. It suggests the necessity for great care in this direction, particularly before and after operations upon the eye. We may deluge the conjunctival sac with antiseptic lotions before opening the anterior chamber, bandage the eye, and imagine that all has been done for the safety of our patient, whereas the facts set forth this evening suggest the possibility of infection from the nose through the lachrymal duct. With this possibility in mind, I have of late years recognized the importance of washing out the lachrymal sac and nasal passages with bichloride of mercury solution where I expect to bandage the eyes after operation.

If affections of the nasal mucous membrane are then the origin of a considerable group of cases of lachrymal disease, it is obviously unwise to treat the duct harshly by probing until after the nasal disease is excluded. The function of the lachrymal duct is not performed in the manner of a drain-pipe, but is rather a capillary tube, and its inflammations may often be cured by washing with suitable lotions. Probing is often necessary, but rarely with the idea of dilating the capillary tube into an open canal. In 1877 I urged that the proper function of the probe was to induce absorption of the products of inflammation in the thickened membrane lining the duct, rather than the rupture of a stricture or dilatation of the duct.

Dr. Alexander B. Randall: I do not think I can add anything to what has been said. I have not met with a great deal of lachrymal trouble in the three or four thousand cases seen at the Episcopal Hospital. I have met, in that number, with only thirty that required absolutely lachrymal treatment. I recall a large number of cases where the nasal trouble seemed to be the cause of the affection, and where treatment directed solely to the nose has resulted most happily. In a large number of children with watery eyes I have never, I believe, with one exception, used any other treatment than that to the nares and lower end of the duct, and have had no reason to regret the absence of other forms of treatment. I have always thought that the puncta, with their arrangement of vessels and the arrangements of the upper part of the lachrymal passage, had a decided physiological purpose, and that it was a great disadvantage to treat these parts by incision and probing if there were no absolute necessity for it. In directing attention to the primary incision and to the constitutional treatment of the case, my results have been most satisfactory with a minimum amount of necessity for surgical procedures directed to the upper part of the lachrymal passages.

Dr. Ralph W. Seiss: With regard to the nasal lesions found in these cases, in the instances that I have seen they have been almost altogether of two types. One is enlargement of the anterior nasal spine with ecchondroses of the septum and swelling of the mucous membrane; the other is atrophic and sclerotic changes. It is important to keep this in mind, as it has an important bearing upon the treatment. The galvano-cautery is an admirable agent in the treatment of nasal troubles, but it must be used with caution in these cases. I have seen seven or eight cases of lachrymal obstruction following the reckless use of this agent to the lower turbinated body. When I receive such a case for treatment I am more apt to use trichlor-acetic acid or a single crystal of chromic acid than the cautery.

Dr. L. Webster Fox: There was one point which was not discussed by Dr. de Schweinitz in his paper, and yet my observations have led me to believe that it plays a very important rôle in the causation of lachrymal disturbances, and that is, the asymmetry of the face. A deviation from the middle line by the nasal bones or septum would perforce cause a modification of the calibre of the lachrymal canal on that side. Any irritating substance lodged in this constricted channel could not find easy escape, and in consequence inflammation develops which eventually would lead on to lachrymal abscess. Then, again, closure of both upper and lower openings of the canaliculi caused by chronic conjunctivitis or blepharitis, proves again that asymmetry must play a factor in these cases, for with both eyes afflicted more or less, but one side of the drainage canal is effected. In 1884 all cases of lachrymal obstruction applying to the eye department of the Germantown Hospital were referred to Dr. S. MacSmith for nasal examination. I was in hopes that we could trace all lachrymal disorders to disturbances in the nasal cavities, but we were doomed to disappointment. While a certain number of cases had undoubted nasal complications, yet in many the lesion was found on the side opposite to the epiphora or lachrymal abscess. In some few cases we found the applied treatment to the nasal cavity did give relief, but in the majority we found that you must apply treatment to the orbital end of the canal to obtain good results. Dr. de Schweinitz did not dwell upon the treatment of lachrymal disturbances, which I regret; for, after all, we desire to learn from each other the best means by which a cure may be brought about, or at least to alleviate our patients. My experience has led me to adopt the larger Cawper probes, followed by the insertion of a silver tube. In certain forms of epiphora a simple dilatation of the mouths of caniliculi will alleviate the patient, or slitting up, as suggested by Mr. Bowman; but where you have a stricture or lachrymal abscess, or both, I adopt the radical treatment—dilatation to its fullest capacity. As regards the application of astringent washes, I have never had much success from their use alone.

Dr. Charles Hermon Thomas: The paper which Dr. de Schweinitz has read is an interesting and valuable contribution to the treatment of lachrymal obstruction. It, and especially the discussion which has taken place, has strongly emphasized a phase of the subject on which I confess I have not laid much stress in my own experience, which has withal been a not unsuccessful one. For a good many years I have had such satisfaction in the treatment of these cases as to leave little to be desired. I do not doubt that many of these cases can be relieved from the nasal side, but I must believe that there are a number of cases which can hardly be treated successfully in this way, exclusively cases in which the irritation has been so long continued that it has resulted in what might be called organic stricture as distinct as stricture of the urethra. Such cases certainly demand local treatment at the point of obstruction.

It was in 1868 that Stilling made the announcement of the results obtained by the use of the knife which he devised for the purpose of cutting strictures of the lachrymal duct. I was impressed with the value of the method of treatment proposed by him, and also with the want of adaptation of the knife which Stilling figured for the purpose. It seemed to me that the stiff conical blade was faulty. I therefore devised a knife with a blunt conical tip, with the edge so set as to cut in withdrawing only, and attached to a flexible shank so that it could be bent to conform to the shape of the bony canal, and yet be rigid enough to control the blade. By slitting the lower canaliculus and first passing some of the more delicate probes, especially those of Dr. Williams, of Boston, this knife may be slipped down and a free linear incision made. The stricture is then divided completely even to the bone, and a large leaden style is introduced and allowed to remain for a few days or weeks at most, being removed daily for a time, for the purpose of washing the passage with some antiseptic fluid. By this method I have had such success as seems to leave little to be desired, and can hardly think that the time has arrived to abandon that method altogether and turn these cases over to the rhinologist. Indeed, I do not now recall a single case in which I had difficulty from obstruction at the lower end after I had gotten a passage through. The facts brought out by Dr. de Schweinitz doubtless make it most desirable to have the nasal passages of patients suffering from epiphora examined, and any abnormalities found therein treated. It is my purpose to return to this subject in the near future, and to enter more into details as to the method of treatment here briefly sketched.

Dr. George M. Gould: I wish to go one step further than Dr. Thomas in emphasizing the importance of ophthalmological treatment as such. There can be no question as regards cases such as Dr. de Schweinitz has presented. When there is absolute impermeability of the nasal end of the duct, the treatment is, of course, outlined by the diagnosis. In the greater number of cases, however, there is not absolute obstruction of the duct, but simply a stenosis, an unhealthy congested condition of the lachrymal mucous membrane, the duct certainly being patent to some extent, but not enough to carry off the large excess of tears. The frequent use of probes has seemed to me not only not necessary but simply superfluous in these cases.

During the past year I have employed a plan of treatment in such cases, which has been so successful that I shall outline it. It consists in slitting the punctum vertically downward toward the palpebral fold, in order to increase the size of the opening. Then canting the patient's head to one side, the corner of the eye is filled with an antiseptic astringent lotion. The duct should first be emptied by pressure, and then allowed to fill with this solution. This procedure of emptying and refilling the duct is repeated several times, and thus the antiseptic solution is brought in contact with canaliculus, sac, and duct by capillarity and pressure. I have had cases in which, after showing the patient the method once, he has afterward practiced it himself and come back in a week perfectly cured. The method is simple and effective, and can be carried out at home. I have often wondered in those cases where probing has been employed, whether it was the probe of the antiseptic lotion that had done the good.

In regard to slitting the canaliculus, I may say that I do not do this at the beginning of the treatment. If there is narrowing of the puncta the fluid enters more readily if it is cut.

Dr. George Friebis: I should like to ask whether, in the experience of Dr. de Schweinitz, he has met with obstruction due to such causes as inflammation and enlargement of the caruncle? I have in mind one case (a male adult, past middle age), in which I paid little attention to the inflamed caruncle, and the case did not improve under the routine treatment. Upon recognizing the inflammation of the caruncle as a possible cause, and treating it with astringents, I succeeded in curing the epiphora without further instrumental interference.

Dr. de Schweinitz: I have presented this series of cases simply for the purpose of classifying one of the many varieties of lachrymal obstruction. I beg Dr. Thomas will not think that I wish to transfer the treatment of lachrymal obstruction to my friends, the rhinologists, much as I value their aid in the management of some of these cases, and I heartly agree with Dr. Thomas and with Dr. Gould, that the ophthalmological treatment of lachrymal obstruction is of paramount importance. These cases illustrate merely certain failures in treatment when applied to the ducts alone, because there is obstruction either at the inferior end of the duct or from intra-nasal lesion. I have not intended this evening to include the large number of cases due to obstruction in the canaliculus from polypi, from tear-stones, from fungus, or to the cases of obstruction high up, or to those which result from conjunctivitis and from malposition of the punctum lachrymale. Dr. Fox's observation in regard to asymmetry of the face is an important one, and deserving of much study. In regard to the use of large probes, I might not find myself in accord with Dr. Fox. Abnormal position of the caruncle or its enlargement, as referred to by Dr. Friebis,is an interesting anomaly. You are all familiar with the cases reported by Von Græfe and by Horner. I have some knowledge of a similar case occurring in the practice of Dr. Wallace, of this city. Cases of this character, or others which have been brought up into discussion, have been purposely omitted in the paper of this evening. My idea was simply to show that certain examples exist, and they are not infrequent, which can be treated better with than without the aid of the rhinologist.

NECROLOGY.

Dr. Edward W. Clarke, of Englewood, N. J., died April 11, 1892, somewhat suddenly, after the performance of a surgical operation. One week before his last illness he was in active practice and seemingly in his usual health. Symptoms of septicæmia and scarlet fever declared themselves, and became progressively worse, notwithstanding the persistent efforts to thwart the disease on the part of Dr. H. M. Banks, his father-in-law, and several consultants. Dr. Clarke was born in Manchester, N. H., about thirty years ago. He took his academic degrees at Columbia College in 1883 and 1884, and his M.D. at the College of Physicians and Surgeons in 1887. He was appointed to the junior surgical staff of the New York Hospital in the same year. After his service ended there, he determined to settle in Englewood and he had already made a markedly favorable impression in that locality. He leaves a widow and two young children to mourn his loss. A most promising career has been, at its commencement, cut short in the pursuance of a natural and inevitable round of professional duty.

Sulphide of Calcium in Diseases of Children.—Dr. H. Valentine Knaggs writes to the *Archives of Pediatrics* in praise of sulphide of calcium as a remedy for infantile convulsions and other nervous diseases.

He claims brilliant results from this medicament when given for the convulsions which occur from teething, falls on the head, meningitis, and even acute tuberculosis. In these cases which are often so intractable under ordinary methods of treatment, sulphide of calcium may effect a cure after other means have failed.

Dr. Knaggs regards calcium sulphide as a much more powerful preparation than has ordinarily been supposed, consequently the dose must be small. The dose will vary from one-eighth to one-twentieth of a grain every hour, or less frequently, according to the severity of the case. The drug must be freshly prepared and active, as it soon loses its virtues and becomes inert. It may be given with ordinary sugar, or sugar of milk. Antipyrine may be sometimes alternated with the sulphide to advantage.

The method which Dr. Knaggs recommends to be adopted in a case of threatened tubercular meningitis consists in cautiously administering the sulphide of calcium in suitable doses, and in holding over antipyrin, should the sulphide prove to be too depressing. With care in giving just sufficient of this drug to act beneficially on the diseased brain, the antipyrine will be seldom called for. The patient ought also to be kept in a continuous atmosphere of eucalyptus steam from a drachm of the oil placed in a bronchitis kettle, or by the occasional use of a small hand-spray charged with the tincture. He reports five cases of tubercular meningitis where he thinks he saved the lives of the little patients by the use of the sulphide.—*Kansas City Medical Record.*

The Digestibility of Cheese.—It is the general opinion of the laity that the eating of cheese after taking food is an assistance to digestion. This view seems not to be in accord with the result of experiments made by von Klenze, as recorded in the *Allgemeine Medicinische Central-Zeitung*, No. 18, 1891. He made very thorough tests of the various forms of cheese found in the dietary lists. For the experiments he used an artificial digestive fluid, to which were added 50 cc. of fresh gastric juice and 3 cc. of hydrochloric acid. Into this he placed a gram of the cheese to be examined. Eighteen varieties were tested, and the following deductions made: Chester and Roquefort cheese took four hours to digest; genuine Emmenthaler, Gorgonzoler, and Neufchatel, eight hours; Romadour, nine hours; and Kottenberger, Brie, Swiss, and the remaining varieties, ten hours. Considering that in a healthy stomach digestion after an ordinary meal is complete in from four to five hours, it would seem from von Klenze's studies, that Chester and Roquefort cheese were the only kinds that were likely to be digested within this length of time, and that the other varieties, some of which are largely in use, not only did not assist digestion, but actually retarded it.—*New York Medical Journal.*

Infant Mortality in France.—At a recent meeting of the Society for the Protection of Children in France, Dr. Rochard (Chairman) stated that France loses every year 250,000 infants, and that out of this number there are at least 100,000 whose lives could be saved with intelligent care.

College Commencements.—The Western Reserve Medical College graduated a class of thirty-four at its last commencement.—*Medical Record.*

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SATURDAY, APRIL 23, 1892.

ADVERTISING SHEETS, ETC.

TO WHOM IT MAY CONCERN: Refer to THE JOURNAL of June 7, 1890, and there read the action of the Association, as follows:

Dr. Brodie offered a resolution prohibiting the placing of books and other advertising sheets on the seats, when Dr. J. H. Hollister offered the following, which was accepted by Dr. Brodie:

WHEREAS, Certain parties without authority are presuming to make use of the Association for the furtherance of advertising interests; therefore,

Resolved, That at all future meetings of the Association, such publications be excluded from the place of meeting either of the General Sessions or of its Sections.

Resolved, That in the future each Chairman of the Committee of Arrangements be directed to procure a copyright of the Official Programme, to the end that the financial rights of the Association may be protected by due process of law.

This was unanimously adopted.

A MEDICAL MISSIONARY SCHOLARSHIP IN LONDON. SURGEONS IN GREAT DEMAND.

The Moravians of England have shown a marked interest in the medical work of their brethren who have exiled themselves to Thibet, and other remote outposts, for the benefit of the heathen. The loss of DR. MARX by epidemic influenza at Leh, in Ladek, has intensified this interest, and a kind of memorial medical scholarship has been begun in London. The March number of the journal *Periodical Accounts*, contains the following statement: "As it costs each medical practitioner at least £300 to qualify (in London or England), it is thought well to aim at a medical missionary training fund to provide for the full course of at least one candidate, preferably from the British Province. We would gladly provide, by a medical scholarship, for the training of a series of candidates for this branch of the service, but that would require a capital of from £6,000 to £8,000."

Contributions have already been made, and others are expected. The lists are to remain open to make up the sum desired until July, 1893, by which time it is hoped that the benefits of the fund will have been claimed by some British candidate. If this expectation is not fulfilled, the fund may be extended *to any other province of the United Fratrum*.

The following is a picture of what missionaries, not medical, have sometimes to undertake. The REV. JAMES LUKE, of Old Calabar, West Africa, writes: "One morning very early, there lay a larger number of sick and sore around the mission-house gates. He and his assistant rolled up their sleeves and worked busily for two hours. Most of the patients were strangers, with the following story to tell. Their spokesman, a tall, well-knit native, with face lined with care, said that his party had come from a town more than one march of the sun to the eastward. They had often heard of the white man and his wondrous medicines, but never before had they had the courage to make the journey. But of late sickness had been rife, and they were made bold by their despair. The chief went through and through all the village and sought out the sick, put them in a long canoe and paddled them slowly down. Many were sick, some were dying, and there was none to heal them. And so this new aboriginal floating hospital ward was brought down from a town whose name was hardly known at the station. In the face of this pathetic picture, what wonder is it that the missionary exclaimed that his one desire was, 'Oh, would I were a medical missionary.' The little knowledge of medicine that he happened to have has served him well at times, but it is because he is not a medical man that he is prepared to favor the extension of medical stations 'all over the sad, sore and suffering face of heathendom.'"

Medical men themselves are equally emphatic as to the prime importance of surgery especially, as an entering wedge when commending civilized training and doctrine to the heathen mind. The surgeon with his chloroform and array of instruments, wins a degree of confidence which can be imagined better than described. This is exemplified by the following narrative of a Swedish surgeon, located on the lower Congo. He had a young African patient with a bad case of "Madura foot," so far advanced that amputation was expedient. The young man was anxious to be rid of his troublesome member, "but first," he says to the surgeon, "he wants to be killed, and when the foot has been taken off, the surgeon will *raise him from the dead*." This is the impression produced upon the poor fellow's mind by happening to see this surgeon do a minor operation under anæsthesia. The most simple surgical procedures, in not a few of the dark continents and islands of the globe, have the force and mystery of superhuman and miraculous achievements. Surgery is able to unlock doors that are sealed against every other civilized agency.

THE SECTIONS, ETC.

In a previous number we directed attention to the meeting of a Committee appointed at the last meeting of the Association, to consider the best means for promoting the prosperity of the Sections. This Committee is constituted of representatives from each of the several Sections, and is to meet at the Cadillac Hotel in Detroit, June 6, at 3 P.M.

Responses have been received from every member but one of that Committee, announcing their interest and intention to be present. The prosperity of the Association as a whole is entirely dependent upon the general prosperity of the Sections. At the last meeting of the Association, it was quite evident that some of the Sections were accomplishing much more satisfactory work than others, which has been, we think justly, attributed to the working organization of such Sections, and that just in proportion as the Sections were independent in their autonomy of the general management of the Association, was this success apparent.

A very few years ago the Dental Section was formed, and because very many practicing dentists were graduates of Dental Colleges and not of recognized Medical Schools, it was necessary that they should have their own autonomy. This has worked very satisfactorily, and the Dental Section has been a great power for good, in encouraging dentists to complete their professional education by taking the regular degree of Doctor of Medicine, as well as that of Dentistry, so that they may come into closer harmony with the medical profession as recognized specialty practitioners.

A couple of years later the Section of Materia Medica and Pharmacy was formed, in order to in like manner encourage Pharmacists to obtain a more liberal professional education by taking degrees in Medical Colleges, and thereby become recognized as specialists in Medicine.

The action of the Association, in constituting these specialty Sections, is in harmony with the trend of men's thoughts, which so largely look to a unification of workers in kindred channels.

The foundation for any good specialty work must be laid on a broad and comprehensive course of study. Where young men have had the advantage of such study, they are able to develop, and do progressive scientific labor in any specialty for which they may have either taste or inclination. Division and subdivision of labor carries with it perfection of detail.

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The special work of the Committee on Section prosperity may also very properly formulate some necessary changes in the working plan of the Association. At the last meeting, the Association directed the President to appoint such a Committee, but in the multiplicity of his work the appointment was unintentionally overlooked, so that, as the purposes of the United Sections Committee are somewhat in the same line, and to carry out the expressed wish of the Association, action on this subject may be taken, for presentation at the general meeting on the next day.

These are exceedingly important questions and subjects for consideration, and are of such common interest that it is very desirable that those having opinions to express, will do well to communicate their views by letter to DR. JOHN S. MARSHALL, No. 9 Jackson St., Chicago, or to DR. LEARTUS CONNOR, Detroit, Mich.

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The several State Societies should be brought into closer union with the Association. In fact, there should be a practical federation of these organizations, whereby all the members of the State societies by virtue of such membership shall become actual members of the American Medical Association; their attendance upon its annual meetings may be optional, but a certificate of membership in a State society should carry with it membership in the National Organization.

The Section Committee will consider this subject, and any member of the Association who wishes to say his say on this, will be good enough to correspond with the Committee of which DR. J. S. MARSHALL of Chicago, and DR. L. CONNOR of Detroit, are members.

It would be a real good thing for the officers of the several State societies so far as possible to attend this committee meeting in person, or communicate their views upon this subject to the above named members of the Committee, and they should by all means make it a point, and if necessary strain a point in order to be present at the Detroit meeting on the 6th or 7th of June.

* * * * *

State, County, District and other local or general medical societies which are in affiliation with the American Medical Association, should at their next meeting, if it is not already done, elect delegates to the Detroit meeting of the American Medical Association. This promises to be one of the most important meetings to the entire profession that has ever been held.

* * * * *

Members of the Association should make it a point to secure the promised attendance of the largest possible number of delegates from their local societies.

* * * * *

The most enjoyable outing a doctor can have is to take his wife with him and go to the annual meetings of the American Medical Association. The gatherings are congenial, and the entertainments prepared for the delegates and their wives are not excelled anywhere. The delegate who once takes his wife to a meeting of the American Medical Association never again gets an opportunity to stag it off alone the next year. A successful attempt at such a one-sided proceeding, is sufficient to keep a man in the edgiest kind of unhappiness for a whole year, with no end of demands for sealskin wraps, laces, and other things that he hears of, and finds out about before the next meeting. Don't do it, we mean don't leave her at home, but make your collections a little closer, she'll help you if necessary, and take her right along.

* * * * *

The meeting this year is at Detroit, the metropolis of the State of Michigan.

Dr. H. O. Walker is chairman of the local Committee of Arrangements and he has succeeded in inducing the whole Michigan State Medical Society to become the hosts of the delegates from all the other forty-three States.

To even think of this, is or should be sufficient to make every man who practices medicine determine to arrange his affairs to enable him to go to Detroit along about the first week in June, say to get there about the 4th to the 7th.

* * * * *

We have in reserve a special announcement for next week that we are quite sure will add somewhere in the neighborhood of—well, two to three thousand delegates and their wives to the number who have already made up their minds to go.

So that the man whose mind is sort o' wavering, may just as well determine at once as in the future, to follow the example of Crockett's coon and come down, and make his arrangements to go to Detroit along about the first week in June.

* * * * *

The past has been a real good year all over the country for doctors. Lots to do, large crops, and plenty of money in circulation and nearly every one of them is entitled to a little outing, and the very thought of becoming a guest of the entire Michigan State Medical Society—just think of it but a moment and you are, not lost, but going to Detroit.

* * * * *

Next week lay your copy of The Journal where your wife can get at it conveniently. This is offered as a mild suggestion.

BRIGHT'S DISEASE—UREA—SEROUS MEMBRANES.

Of the various theories of Bright's disease, those seem the most rational which regard the process or processes as primarily nutritional disturbances, with secondary structural involvement of different organs. The first important structural derangement is probably endarteritis, with later involvement of the kidneys. We are not at present concerned with the various lesions, nor with the etiological factors, leading to the disorder. In this view of the matter, it becomes important to know the earliest phenomenon which can be relied upon to indicate the presence or approach of these very serious lesions. The general symptoms, headache, vertigo, neuralgic pains, dyspnœa, anæmia, etc., are too indefinite for practical application. The appearance of albumin and casts in the urine occurs too late for the purpose, and albuminuria alone is altogether too uncertain a sign to be of much importance.

It has long been known that the daily excretion of urea is diminished in Bright's diseases, but it has remained for Dr. C. S. Bond, of Richmond, Ind., to thoroughly apprise the profession of the importance of this factor, and to show that it precedes the other positive evidences of the disease for a considerable period. Nearly three years ago Dr. Bond reported[1] fifty cases illustrating his views, and which had been under observation from two to five years. Four of these cases, besides showing a diminished daily excretion of urea, were passing large quantities of albumin with casts. Of the four, three showed chronic nephritis post-mortem; the fourth was not cut.

Three more of the cases showed diminished urea secretion, but no albumin or casts, and one of these was proven to have nephritis by autopsy. Three other cases that died likewise had diminished urea excretion, but only passed albumin and casts later. An autopsy was obtained in one of these cases, and showed chronic nephritis. The remaining forty cases reported, were all living at the time of the report, some apparently well, others not. All had symptomatic evidences of Bright's disease, eighteen had albuminuria, sixteen of these passed casts, but in all the excretion of urea was diminished. Upon these grounds Dr. Bond claims, and rightly we think, that diminished excretion of urea is an evidence of Bright's disease, and the earliest certain symptom. But for this sign to be of importance, the patient must be upon a mixed diet, otherwise healthy, and the diminution of urea must exist during a considerable time as shown by frequent examinations. Dr. Bond regards 25 to 35 grams of urea as a normal daily excretion and his Bright's cases excrete daily from 10 to 20 grams, averaging about 15 grams. He has found the simple ureometer of Doremus sufficiently accurate for his purposes.

Extending his researches Dr. Bond has called attention to the relation of urea excretion to disease of the serous membranes.[2] It is well known that Bright's disease is often complicated by a sudden effusion into the pericardium, or pleural cavity. It occurred to Dr. Bond that inflammations of serous membranes might at times be caused by latent Bright's disease, that is to say, by the conditions preceding the manifestations of the disease, and if so, such cases could be differentiated by diminished urea excretion. And upon actual examination he found this to be true. One of the most interesting cases which he reports in this connection is one of acute pelvic peritonitis. The patient was a married lady of twenty-three, well-nourished, no children or miscarriages, no history of gonorrhœa or syphilis. No traumatic or other cause could be found. The attack commenced with chilly sensations, and acute pain in the abdomen. Temperature was 103, pulse 120, facies characteristic and nausea present. Serous effusion occurred, the pelvic floor became hardened, and the uterus became fixed. The case terminated in recovery, and the effusion was absorbed after several weeks. But she still complained of headache, slight nausea, dypsnœa on exertion, and general weakness. *Examination of the urine showed no* albumin or casts, but the daily excretion of urea ranged from 12 to 18 grams. Six months later there was a relapse of the peritonitis, when in addition to morphia to relieve the pain, pilocarpine and saline cathartics were employed, with the result that the peritonitis, which promised to be more serious than the first attack, terminated abruptly in three days. After this nitro-glycerine, saline cathartics, and sudorifics were vigorously employed, until the urea excretion became normal, and the patient apparently perfectly well. She now became pregnant and at the eighth month labor set in, and with it convulsions, the case ultimately terminating favorably. At the time of delivery the urea excretion was 9.6 grams.

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[1] American Journal Medical Sciences, Vol. 99, p. 22.

[2] Amer. Jour. Med. Sciences Vol. 102, p. 269.

In addition to this case Dr. Bond refers to three more cases of pelvic peritonitis, to four of pericarditis, two of arthritis, and four of endarteritis, which show diminished urea excretion. To this list we can personally add one case of hydrocele.

It is hardly possible to overrate the importance of these observations. It certainly seems that Dr. Bond has pointed out a very important diagnostic sign. At least diminished urea is an evidence of deficient elimination, and is an important means of determining when certain conditions, particularly serous inflammations, are *autogenetic*.

A PUBLIC HEALTH OFFICER IN THE PRESIDENT'S CABINET.

With scarcely an exception the American medical journals have supported the movement inaugurated at the last meeting of the American Medical Association, which urged upon Congress the necessity for, and value to the Nation of a Cabinet Officer of Public Health.

The secular press have also, greatly to their credit, supported the measure.

In fact, the proposition has met with very little adverse criticism in any quarter.

The American Medical Association having started the work of obtaining proper legislation to this end, and with entire unanimity on the part of its members in session at Washington, it is now very desirable that the State Societies should, at their meetings, take up the subject and adopt suitable resolutions affirming the desirability of prompt action on the part of the present Congress in its enactment of the bill now pending, and urge upon all State Society members to correspond with their own members of Congress in behalf of the bill.

We again urge the members of the American Medical Association to renew, and not relax their labors and correspondence on this subject that is of such vital consequence, not only to the medical profession, but to the entire people of the Nation.

New questions pertaining to sanitation and hygienic living, immigration and education, are constantly arising, and should have a reference for correct solution to a Public Health Department of the National Government.

A bill recently introduced pertaining to the adulteration of foods and drugs, can only be successfully executed through a Public Health Officer of the Government. Because of the non-existence of such a department of the service, the execution of this bill is saddled upon the already overloaded Secretary of the Treasury.

State, County and District Medical Societies can do very much by prompt action in making appeals to Congress to take action on this measure at an early date.

Many important questions are arising in connection with the World's Columbian Exposition, which should have a reference to and solution in the Nation's Department of Public Health.

ST. LUKE'S HOSPITAL OF NEW YORK.

This hospital must before long be removed to a new location. An admirably adapted site has been purchased for about $500,000 on the westerly side of the city. Only one hospital building will be erected at the present time, but the cost of this first ward will be not less than another half-million. Work will be begun so soon as the plans are drawn. The new structure will be patterned after the best that can be found abroad or at home, and in its equipment it will be as good as the best. The sale of the old site, valued at $2,500,000, will enable the trustees to add a large sum to the endowment fund. This will be drawn upon for the construction of other buildings as they may be required.

St. Luke's Hospital has always the good wishes of the medical profession; not simply because of its name — that of our patron-apostle — but because of its long history of honorable and considerate dealings with the members of the medical staff. That staff has embraced a fine body of gentlemen, and they have been recognized as such by the management. The new situation is on Tenth avenue and 114th street, near the head of Morningside Park.

FAVORABLE OUTLOOK FOR ELECTROCUTION IN NEW YORK.

The eighth electrocution in New York State took place March 28, with essentially the same results as the former ones. Death was almost instantaneously affected although the beating of the heart was not stilled until after three contacts of twelve seconds each. In former executions the heart was stilled in the course of two contacts of twenty to thirty seconds' duration. It is stated that the results are considered favorable to the maintenance of the electrocution law upon the statute books. No further opposition to the law is expected at the present session of the legislature. There was a kind of tacit understanding that if this execution passed off without mishap or blunder or any great amount of disfigurement of the criminal, the method should be allowed to go on, during another year, on probation. The friends of the method believe that improvements will be made, and every reasonable objection will be removed.

DR. SAMUEL D. GROSS.

We are in receipt of the following circular which is self explanatory:

A monument to the late Samuel David Gross, M.D., LL.D., D. C. L., Oxon; LL.D., Cantab.; LL.D., Edinburgh; LL.D., Univ. Penn., etc.

"American Medicine and Surgery has had no abler exponent than Samuel David Gross!

"There has been no man in our profession more honored by scientific associations and learned institutions, both abroad and at home, than Dr. Gross; none who have been more admired by their fellow practitioners, or revered by former pupils!

"A boy of studious habits, ambitious promptings, integrity of purpose, and purity of character; without the prestige of a name, or the influence of family or fortune, he rose, unaided, to the highest position in the profession of his selection. A man of marked personal character, with great acquirements, he made an impress upon American Surgery, which has served to dignify American Medicine!

"His long and brilliant record of deeds well done, has claimed the admiration of the world; and since he has passed away and his life-work gone into history, his friends and admirers have been inspired to erect to his memory such a monument as will commemorate his life and character.

"To further this most praiseworthy object, the American Surgical Association, at its last session, adopted the following resolution:

"'*Resolved:* That the President be empowered to appoint a committee with authority to confer with the friends and admirers of the late Prof. Samuel D. Gross, and with the *profession at large*, for the initiation of a movement on the part of the Association, having for its object the erection of a monument to Dr. Gross in the City of Washington, D. C.'

"The subjoined committee from the Association has been appointed, with authority to confer with the *profession at large*, and solicit subscriptions.

"It is not the purpose of the American Surgical Association to claim the honor of erecting this monument to the memory of one of its most distinguished Fellows; but rather is its intention to *initiate* a movement in which the entire American profession should feel an equal interest: because Dr. Gross was of no exclusive faction, but a leading member of the whole profession.

"Hence it is, that each member of the committee is instructed to appoint sub-committees in his own State, irrespective of fellowship in this, or any other Association, which sub-committees will aid him in the collection of contributions to the general fund. Any contributions may be sent to Dr. Jno. B. Roberts, 1627 Walnut street, Philadelphia. He is the treasurer of the Association and will receipt for the same, and from time to time acknowledge subscriptions through the columns of THE JOURNAL of the American Medical Association. In the event of a failure to collect a sum sufficient to complete the monument, the contributions will all be returned to the subscribers. J. R. WEIST, M.D., Chairman.

C. H. MASTIN, M.D., Secretary.

Committee: Drs. Wm. T. Briggs, Tennessee; Levi C. Lane, California; Solon Marks, Wisconsin; L. S. Pilcher, New York; A. Vanderveer, New York; James McCann, Pennsylvania; D. Hayes Agnew, Pennsylvania; J. Ewing Mears, Pennsylvania; S. H. Weeks, Maine; Hunter McGuire, Virginia; L. McLane Tiffany, Maryland; N. P. Dandridge, Ohio; H. H. Mudd, Missouri; J. Collins Warren, Massachusetts; B. A. Watson, New Jersey; D. W. Yandell, Kentucky; N. Senn, Illinois; Chas. B. Nancrede, Michigan; W. H. Carmalt, Connecticut.

There is not a single physician in our entire Nation who is not familiar with the name and professional achievements of the late Dr. Samuel D. Gross, and certainly there is not a member of the American Medical Association who will not personally rejoice that the American Surgical Association has inaugurated this movement in his honor. This work should assume as largely as possible a popular character, and receive the support of nearly the entire number of our profession. To this end the cause should be presented at the ensuing meeting of the American Medical Association, and to every State and District Medical Society. Those who can afford an offering of ten or five dollars should remit to Dr. Roberts at once, but there is an army of nearly six thousand members of the American Medical Association who will no doubt almost every one respond with sums of three, two and one dollar contributions. Send your subscription promptly, get your name placed in the list and THE JOURNAL will make the record just where you will see it. For further information correspond with either Dr. Martin, Dr. Weist, or Dr. Roberts.

EDITORIAL NOTES.

A PROFESSIONAL IMPOSTOR.—Dr. Aspad Gerster writes to the *New York Medical Journal* giving warning of a fraudulent canvasser who calls himself "Dr. Goodman." The party is a bad man and not a doctor, and he may change his name from time to time. According to Dr. Gerster the fraudulent operations of the man consist in offering and selling a gas-fixture, or some other implement of merit and utility, receiving money therefor and then not delivering the goods. The man adds to the plausibility of his scheme by quoting the name of Dr. Gerster, or some other medical man of note, as that of a schoolmate, friend and endorser. Dr. Gerster says that an impostor of this kind has succeeded in extracting sums of money from physicians in several Western cities. The man is now in the Eastern States.

An Overdose of Gold.—In December last, a French soldier met with death by gold instead of lead. Having been accused of the theft of a sum of money, he followed the course, not unknown in the Orient, of secreting the stolen cash in his stomach. He swallowed the money, and by so doing was acquitted by the judge, because there was no tangible or exterior evidence of guilt. He was set free, but disease presently arrested him; he became the subject of an acute attack of indigestion, due to the ingested gold. This attack subsequently resulted in death. An autopsy was performed and there were found in his stomach twenty-one gold coins, of a value of eighty-five dollars to some former owner. The lethal dose of gold has not been recorded hitherto in the text-books on toxicology, but it can in the future be stated that the quantity above mentioned "has been followed by a fatal result."

Prize Medal re Tuberculosis.—The Société de Médecine de Paris has offered a prize for the best essay on tubercular disease that shall be written during the current year. The prize will be a gold medal and a purse worth three hundred dollars.

Pan-American Medical Congress.—Dr. William F. Hutchinson, formerly of Providence, but now Assistant Secretary of the proposed Congress, after having been absent two months in the West Indies for the purpose of furthering its interests, returned to New York April 12. He came as a passenger on the steamer Neptune from Jamaica. He reports that he was most cordially received by medical men and in official circles, and that he was enabled to organize a number of branches of the Congress, especially in Spanish-speaking countries, which will probably interest themselves to a degree that had not at first been anticipated.

Surgeon-General of the Navy.—Medical Director John M. Browne has been appointed to succeed himself at the head of the Medical Naval Bureau. After four years of service in that position, and with only a year intervening before the time of his statutory retirement, the authorities at Washington have found it expedient to make no change during the current year. It has been publicly stated that the other applicants for the appointment have, as a rule, requested their friends at the seat of Government not to press their claims if Dr. Browne had any prospects of reappointment. As a result of this and other considerations, the appointing powers have postponed a part of their responsibilities until May, 1893. Surgeon J. C. Boyd, it is said, will be promoted to the position of Assistant to General Browne. Medical Inspector Van Reypen, the present assistant in the Bureau, will probably be assigned to the Pacific Station, as Fleet Surgeon, on board of the San Francisco.

Worthy of Imitation.—"*An Ordinance to Prevent Empiricism.* Be it ordained by the Board of Councilmen of the City of Bowling Green:

"Section 1. That it shall be unlawful for any travelling or itinerant doctor to practice medicine in any of its branches within the limits of this city. To open an office for such purpose, or to announce to the public in any other way an intention to practice medicine shall be an offense within the meaning of this Ordinance. Provided, that nothing in this Ordinance shall be so construed as to prohibit any reputable physician or surgeon from any other place being called to see a particular case or family, or to do a particular surgical operation in said City.

"Section 2. Any person convicted of a violation of the provisions of Section 1, of this Ordinance, shall be fined the sum of not less than $50 nor more than $100 for each day so engaged in the practice of medicine.

"Section 3. This Ordinance shall be in effect from and after its passage, and all Ordinances or parts of Ordinances in conflict with the provisions of this Ordinance are hereby repealed.

"Passed Board of Councilmen April 4, 1892.

Approved. G. S. Hollingsworth,
J. K. Forbes, Mayor. City Clerk."

This Ordinance has been passed in Lexington, Paducah, Harrodsburg, Lebanon, Elizabethtown, Stanford, Franklin, Glasgow, and several other cities, and is pending and will be passed in nearly every other city and town in the State of Kentucky.

The following letter and circular claims the attention and response of nearly every member of The American Medical Association:

Philadelphia, Pa., April 5, 1892.

An anæsthetic investigation has been arranged by the General Committee of the British Medical Association, for report at its annual meeting in 1892. The investigations are to be chiefly clinical.

An auxiliary committee has been formed in this country to aid the British Association, and is desirous of adding to the data of the General Committee a collection of such facts as are called for in the accompanying blank.

The Hyderabad Chloroform Commission has not settled the question as to the mode of death resulting from chloroform, but it has stimulated the profession to seek the cause from the clinical standpoint.

I should esteem it a great favor if you would kindly furnish the information asked for upon the enclosed form, and return it to me by the 5th of May.

Hoping to receive your valuable assistance in these investigations, I am, Very truly yours,

LAURENCE TURNBULL, M.D., Chairman.

1502 Walnut Street, Philadelphia.

a. Programme of records and information desired.

1. The total number of administrations of each anæsthetic, March 1, 1891 to March 1, 1892 (up to this date), in your hospital, or under your supervision.

2. The number of cases in which death has occured during or shortly after anæsthetization.

3. The number of cases in which dangerous symptoms have occurred.

b. Your opinion, formed from your own personal experience as to—

1. The relative safety of the various anæsthetics which you have used.

2. The best method and manner of administering them.

3. When to use one, and when the other.

4. The most effective methods of restoring patients threatened with death from anæsthetics.

c. Education in administration of anæsthetics.

1. How are students taught to administer anæsthetics, and how far are they compelled to gain a practical knowledge of administering them in the medical schools or hospitals with which you are connected.

d. Special details of cases in which dangerous symptoms or death have occurred.

The following synopsis will give an idea of the special details requested in case of death, or dangerous symptoms—(i. e. such symptoms as raise the fear of immediate death, and call for the use of artificial respiration).

A—The anæsthetic.

1. Its nature, e. g. ether, chloroform, etc.

2. Purity of drug, e. g. from what source obtained, how long kept, whether exposed to light, etc.

3. Whether other persons who have taken from same source have evinced kindred symptoms.

4. Method of administration; amount of dilution; length of time administered; quantity used.

B—The Patient.

1. Age; sex; physique, first time or not of taking anæsthetic; previous drugs (e. g. chloral, morphia, alcohol, etc).

2. State of health.

3. Preparation of patient: food, purgatives, clothing, temperature of atmosphere, etc.

4. Phenomena of anæsthesia, length of time going off, struggling, laryngeal spasm, convulsions, vomiting, etc.

5. Condition of pulse, respiration, pupil, reflexes. Was anæsthesia profound. Which failed first, pulse or respiration.

C.—Operation.

1. Nature and duration, patient kept warm, posture, amount of hæmorrhage, shock.

D.—After effects.

1. Faintness, exhaustion, vomiting, etc.

e. Methods adopted in cases where death or symptoms of danger have occurred.

1. (e. g. pulling forward of tongue, inversion of patient, artificial respiration (which method) nitrite of amyl, electricity, heat, etc.—and with what results.)

A NEW AND PRACTICAL USE FOR ALUMINUM.—This metal with its unlimited uses seems to be peculiarly adapted for surgical appliances, instruments and artificial limbs; its low specific gravity together with its great comparative strength are qualities that are desirable to be combined in an artificial leg or arm, and we predict a very large demand for the new aluminum limbs just about to be put upon the market by this enterprising house.

There are amputations of the lower limbs that surgeons deem desirable to make in order to remove a part or the whole of a diseased or injured foot, without sacrificing more of the member than the parts involved. We refer to amputations technically termed tibio-tarsal, tarso-metatarsal and medio-tarsal. These amputations have always been in disfavor with artificial limb makers, who have almost to a unit decried their license, and in too many instances have persuaded the surgeons to sacrifice much of a healthy leg merely to obtain a stump that would better accommodate the artificial limbs that they were able to produce.

The new artificial leg constructed of aluminum combined with the rubber foot is adaptable to the above enumerated amputations. The socket of aluminum encases the stump and on account of the strength of the metal, the socket does not increase the diameters of the ankle to an objectionable degree in order to obtain the requisite strength; the metal is cast into the proper shape to give ease and comfort to the wearer; the aluminum socket is terminated by a rubber foot, which not only produces the similation of the natural foot, but provides a soft, springy medium to walk upon, and a resistant, phalangeal ball to rise upon while walking, running or ascending stairs.

It is obvious that by this invention the amputation can be conditional upon the injury, and the artificial limb conditional upon the amputation. In this alone the invention of the aluminum and rubber leg will prove not only a boon to the man who has suffered the amputation, but the solution of a problem that has many times perplexed the operating surgeon, as it eliminates all the objections heretofore pressed against amputations in the region of the tarsus. The surgeon may thus rejoice in being able to observe the *old* and consistent law of amputating with the least sacrifice.

Aluminum also plays an important part in the construction of strong and durable artificial arms. The socket of an arm being made of that metal is light and strong, and will enable the wearer to subject the artificial arm to severe uses without danger of destruction. It will not crack from overstrain like wood; it will not become soft and limpsey or foul from perspiration like leather; it is lighter than any other metal and is amply strong for every purpose.

These inventions will unquestionably mark a new era in the industry and add much to the prestige of the house that has already achieved distinction in its humane work.

IN a recent case against the New York Hospital, the judge dismissed the case on the ground that, the hospital being a charitable institution, the laws of the State did not admit of a suit being brought against it. In this special case $50,000 was sought, on the ground that a boy lost his leg from the incompetence and negligence of the hospital surgeons and nurses.—*American Lancet.*

SELECTIONS.

The Value of a Trade-Mark.—Diuretin (Knoll) and theobromine sodio-salicylate are chemically the same. There is no patent, so far as we are aware, preventing the manufacture of the latter by any competent chemist. As a matter of fact, a pure preparation is upon the market from the laboratory of a most reliable chemist. Diuretin is a copyrighted, or trade-marked, name. The preparation sold under that name costs $2.50 an ounce. A trustworthy preparation of the same thing, under its legitimate chemical name, costs fifty cents an ounce.

Ether Drinking.—The practice of ether drinking, which had become so common as to cause considerable alarm in Ireland, has begun to diminish as a result of very stringent laws. But it has been discovered lately that the habit is rapidly spreading in Russia, to such an extent indeed that the Government has found it necessary to prohibit the sale of ether, and of substances containing it, such as Hoffman's anodyne, except under severe restrictions. In Paris, also, ether drinking has become quite the fashion. It is taken there usually with cognac.—*Medical Record.*

Dr. H. P. C. Wilson, of Baltimore, says that of the thousand patients who have come to him suffering from the opium habit, nearly all have been led into it by the attending physician. He thinks no diseased condition, except advanced and rapidly fatal cancer, justifies the habitual use of opium for the relief of pain.—*American Lancet.*

Removal of Clots from Base of Brain—Recovery.—Dr. Laplace (Philadelphia) records a case of basal hæmorrhage from perforating wound through the left orbit; coma, convulsions, and signs of compression existed. Trephining was done just above the zygoma, and a specially contrived instrument of malleable wire ("a miniature egg-beater") was insinuated between the dura and the skull to the cavernous sinus, and about a teaspoonful of clot was removed. Consciousness returned four days later, power of speech a week later still, and then recovery was steady and uninterrupted. The patient has anæsthesia of the left eye, and internal strabismus.—*Medical and Surgical Reporter.*

MISCELLANY.

American Pediatric Society, Preliminary Program.—The American Pediatric Society will hold its Fourth Annual Meeting in Boston, Mass., May 2, 3, and 4, 1892.

The Sessions will be held in the Boston Medical Library Association Building, 19 Boylston Place. (Opposite the Common, between Tremont St. and Park Square.)

Monday, May 2—First Session—2 p.m.

The President's Annual Address, By William Osler, M.D., of Baltimore, Md.

2. "Experiments as to the Value of Nascent Ozone in certain Forms of Diseases of Children, with Demonstration of an Efficient Generator," by Augustus Caille, M.D., New York City.

3. "Manifestations of La Grippe in Children," Chas. Warrington Earle, M.D., Chicago, Ill.

4. "An Epidemic of Alopecia in a School of Girls," Chas. P. Putnum, M.D., Boston, Mass.

Tuesday, May 3—Morning Session—10 a.m.

1. Discussion arranged by the Council on "The Relation of Rheumatism and Chorea," by C. W. Townsend, M.D., Boston, Mass.; M. Allen Starr, M.D., New York City; Samuel S. Adams, M.D., Washington, D. C.

2. "Nomenclature of Diseases of the Mouth," T. M. Rotch, M.D., Boston, Mass.

3. Report of the Committee on Nomenclature of Stomatitis.

4. "Pseudo-Diphtheric Processes," W. D. Booker, M.D., Baltimore, Md.

5. "Treatment of Diphtheria by Sublimations of Mercury," Dillon Brown, M.D., New York City.

Tuesday, May 3—Afternoon Session—3 p.m.

1. "Typhoid Fever in Children under Two Years," W. P. Northrup, M.D., New York City.

2. "Typhoid Fever in Children," Chas. Warrington Earle, M.D., Chicago, Ill.

3. "Typhoid Fever in Infancy," W. S. Christopher, M.D., Chicago, Ill.

4. "Acute Emphysema in Children, with Report of Cases," F. Forchheimer, M.D., Cincinnati, O.

5. "Pre-tubercular Anæmia," B. K. Rachford, M.D., Newport, Ky.

Tuesday, May 3—Evening Session—8 p.m.

1. Business Meeting at the residence of Dr. T. M. Rotch, No. 197 Commonwealth Avenue.

2. Report of the Council and Election of officers.

9 o'clock, p.m.

Reception of the members of the American Pediatric Society, to be given by Dr. T. M. Rotch at his residence.

Wednesday, May 4—Morning Session—10 a.m.

1. "Prevention *versus* Medication in the Management of the Diseases of Children," I. N. Love, M.D., St. Louis, Mo.

2. "Syphilitic Broncho-Stenosis," A. Seibert, M.D., New York City.

3. "A Simple Method for Clinical Examination of Breast Milk," L. Emmet Holt, M.D., New York City.

4. "Sacro-Coccygeal Tumor in a Child 3 Weeks Old; Operation; Recovery," F. Huber, M.D., New York City.

5. (Title to be announced.) Henry Koplik, M.D., New York City.

Wednesday, May 4—Afternoon Session—3 p.m.

1. "Two Tracheal and Bronchial Casts," F. Huber, M.D., New York City.

2. "A Case of Death from Laryngismus Stridulus in incipient Rachitis," Samuel S. Adams, M.D., Washington, D. C.

3. "The Value of Milk Laboratories for the Advancement of Our Knowledge of Artifical Feeding," T. M. Rotch, M.D., Boston, Mass.

4. Action relative to the death of Dr. John Amory Jeffries, of Boston, Mass.

During the Sessions of the Society, the Members are invited to visit and inspect the Milk Laboratory, 203 Clarendon Street.

Samuel S. Adams, M.D., *Secretary.*

1632 K Street, Washington, D. C., April 15, 1892.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 9, 1892, to April 15, 1892.

First Lieut. James D. Glennan, Asst. Surgeon, is relieved from duty at Camp Oklahoma, and ordered to Ft. Sill, Oklahoma Ter., for duty at that station, relieving Capt. Francis J. Ives, Asst. Surgeon, who, on being relieved, will report in person to the commanding officer at Ft. Sheridan Ill., for duty at that post. S. O. 86, A. G. O., April 12, 1892.

Capt. William H. Arthur, Asst. Surgeon, is relieved from duty at Ft. Grant, Ariz., and ordered to Vancouver Bks., Washington, for duty as post surgeon at that station, relieving Capt. Louis Brechemin, Asst. Surgeon. Capt. Brechemin, upon being relieved by Capt. Arthur, will return to his proper station, Presidio of San Francisco, Cal.

Capt. Alonzo R. Chapin, Asst. Surgeon U. S. A., is granted leave of absence for three months, on surgeon's certificate of disability.

Capt. William C. Gorgas, Asst. Surgeon U. S. A., is granted leave of absence for two months, to take effect on or about May 1, 1892, with permission to apply for an extension of one month.

First Lieut. William N. Suter, Asst. Surgeon U. S. A., resignation has been accepted by the President, to take effect July 28, 1892.

First Lieut. Merritte W. Ireland, Asst. Surgeon U. S. A., ordered to Ft. Yates, N. D., for temporary duty during the absence of Capt. Alonzo R. Chapin, Asst. Surgeon U. S. A., on sick leave.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending April 16, 1892.

Surgeon W. S. Dixon, ordered to the Smithsonian Institution.

The Journal of the
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ORIGINAL ARTICLES.

THE MICROSCOPE IS NOT A TOY, BUT A USEFUL MEANS TO GYNECOLOGICAL ENDS.

Read before the Gynecological Society of Boston, March 10, 1892.

BY EPHRAIM CUTTER, M.D., LL.D.
CORRESPONDING MEMBER.

It shows one cause of neurosis and fetid urine in women.

Case 1.—Some years ago, a lady patient complained of the offensive odor of her urine when voided. She said it smelt like "bilge water."

On examination the urine was found to be of good specific gravity, slightly mahogany colored, no deposit on cooling, no albumin, no morphological element at first found. The odor was, as she said, a strong smell of tannic acid as in newly tanned sole leather.

I did not give up, but carefully noting this and other experiments with the microscope I found bacteria in considerable quantity, in the freshly voided urine. They were segregate, globular, and not auto-mobile. I regarded them as the babies of a fungus vegetation, corresponding to the bacilli or babies of the butyric acid fermentation vegetation found in rancid butter which in baby stage of development multiply and by the life chemical actions of their protoplasm develop the rancid smell and taste, just as the gases of putrefaction are developed by the bacteria and mycelial filaments of the putrefactive vegetations.

It occurred to me to lay down the principle for myself, that no bacterial nor mycelial vegetations were normally present in the urine while it is inside the bladder, and that the smell complained of was due to the presence of this very vegetation, whose name I was not acquainted with. Nor did I think it necessary to wait for the name before action to remove, any more than one would stop to ask the name of a burglar caught in his house at midnight stealing, before he was arrested or driven off.

By treatment the vegetation was removed, and the bad smell went with it. Hence I have concluded my reasoning was correct.

Treatment.—This case was treated on the principle that if nature is well sustained she will clear out any such abnormal vegetation. In other words vegetable parasites will not live in a perfectly healthy body, any more than the fungus which causes peach tree blight will grow unless the tree has been weakened by the losing of a certain amount of its normal mineral food, as Prof. Goessmann, of Massachusetts Agricultural College, told me.

Now, as I had known from experience that beef was an article of food which requires the minimum of nerve force to digest, and when digested would sustain human life in normality indefinitely (I have not the time to give the reasons, nor do I need to, as this is merely an esoteric history), I put her on beef alone, and in a short time the bad smell disappeared and along with it the bacteria aforesaid. No medicine.

Remarks.—This may be called general treatment. It should never be forgotten that after all it is nature that cures. In husbandry it is nature that raises the crop. For the farmer may plow, plant, and cultivate in vain, unless nature does her work. Paul said "I have planted, and Apollos watered, but God gave the increase." Nature will cure almost any disease if she has a fair chance.

Case 2.—A middle aged lady made great complaint of fetid urine as it was voided. (If it becomes fetid on standing it is not so much of a medical matter, though perfectly healthy urine is not apt to become fetid, unless kept in a very warm place.)

Along with this she had great distress of the bladder; hyperæsthesia of the urethra and vagina, with a completely anteverted uterus bound down by adhesions.

This case has had a singular history to which I will refer briefly:

She had been a patient of Drs. H. R. Storer and Warner, in their private hospital in Somerville, and was operated on by them for stricture of the rectum in 1870.

In 1872, she was operated on by Dr. A. S. Woodward[1] of Brandon, Vermont, who removed the entire coccyx,[2] which had been broken by a severe fall years before. In 1876, she was operated on by Dr. Charles L. Allen[3] (now dead), professor of "Theory and Practice," University of Vermont, by dilating the urethra and carrying fingers into the bladder, finding ulceration, which he relieved by injections of nitrate of silver solution. In 1880, she was operated on again by Dr. Allen for stricture which had entirely closed the rectum nearly four inches for a week; all which helped to explain the neurasthenic suffering. I examined her blood for rheumatism (as she had had it before) with the microscope, and found none. The chemical examination of the urine shed no light, but a microscopical inquiry as to the fetor of the urine at once showed a bacterial or microbal vegetation made up *not* like that of case 1, with globular spores alone, but of several globular spores joined side by side, so as to make rods or bacilli which were very numerous, auto-mobile and active. The microscope, and the microscope alone revealed to me the true situation. Here was a case with anteverted uterus, with the coccyx removed, with the rectum torn open twice and seared with a hot iron, the urethra dilated, and the bladder treated as above, who could live in comparative comfort, but who by the addition of the intra-vesical cryptogamic vegetation was rendered almost frantic with suffering.

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[1] Prof. "Diseases of Women and Children," University Burlington, Vermont.

[2] At that time, said to be the fifth case on record in the world.

[3] Of Rutland, Vermont.

In addition to the suffering and the fetor, she complained of having a "wooden bladder." All natural motion of the organ had ceased except when stimulated by powerful diuretics, and she could not empty the bladder without supra pubic manual pressure. She had called the attention of her physician to these symptoms. He examined the urine with a microscope (so he told her) and said there was nothing the matter with the urine. The odor was due to the condition of the blood, which he did not examine.

Doubtless I should have done no better than her medical attendant, had I not since 1853, been almost constantly studying the urine in disease, and have learned much more than I knew when I first began. Nor should I now write this communication except that the lady in question insisted it "was my duty to suffering humanity" to tell what I knew about such cases.

The treatment in this case was general and local.

General Treatment.—This patient had for sixteen years lived principally on a milk diet, prescribed by Dr. Allen, of which diet she was very fond. I could not bring her down to beef alone, it distressed her and made her sick at the stomach, but I got her down *towards* it. I told her she could not expect to "cast out Satan," if she continued to let him in through bad food.

Local Treatment was by injecting the bladder with a warm, saturated, watery solution of benzoate of soda once in two days.[4] The fountain syringe was employed. Such was the extreme hyperæsthesia of the urethra, that it was positive agony to introduce the catheter for injection. The subsequent suffering was also very great.

Still, the effect on the vegetation was prompt and decisive. The auto-mobile protoplasmic motions of the bacteria ceased. After the second injection, their number was greatly diminished. The relief was great. After the third injection, some of the parent mycelial filaments were found. Evidently the "old settlers" were being rooted out. I suppose the vegetations nested in the folds of the contracted bladder, ready to go forth when the field was clear. Indeed, from the chronic nature of the case, I expect it will take some time to kill off the whole brood.

But there is so much relief from what has been done, that I feel assured she will be entirely relieved of these vegetations which, superadded to her old troubles, have made her life one of misery and torment the past few months.

Thanks to the use of an instrument which is regarded as a toy, or as my "hobby," or to be kept at a drug store, and a very poor one at that.

Remarks on the Nature of this Vegetation.—Some time ago, in *Gaillard's Medical Journal*, I published an account of lactic acid vinegar, lactic acid alcohol, and lactic acid mycelial filaments which loaded the urine and sputum of a patient who had lived on milk, and taken lactic acid as a medicine. Since that time, an oxalate of lime calculus was removed from his bladder. It is possible that a stone is in the bladder of the present case. But as she has a history of a milk diet, it is *probable her vegetation* is lactic acid in the bacterial stage. This is for one who knows more than I do to decide. But the case is viewed from the standpoint of a gynecist, not a technical botanist. If a foreign body gets into the eye, surgeons do not wait for an accurate description *before removal, though it would be desirable.*

This case is under treatment which, but for the microscope, would not be understood.

Case 3.—That noble man, Dr. Wheeler, of Chelsea, Mass., called my attention some years ago to a case of catalepsy, a lady 72 years old, which needed more study than the medical gentlemen who had seen her could give—adding some encouraging and stimulating words, that made me put my wits to work at once.

It seems she referred the seat of her trouble to the pelvis, saying that when "she had fits," there seemed to be something *streaming up in her abdomen* from just above the pubis, that would go all over her, and then she would be in the midst of her catalepsy. Her blood was normal. I supposed the case was due to *uterine trouble. On examination, I found a rarity.* The uterus, in size and position, was normal. The speculum revealed an almost virgin os; the vagina was normal. There were no tumors found. Abdomen was normal. As it is a rule with me to examine urine of patients under the microscope, I did so here. Another surprise. I found the freshly voided urine filled with:

1. Large, beautiful and graceful skeins of mycelial filaments.

2. Bacteria in large abundance and very actively swarming.

There was no other abnormality that I could find.

In the order of time this case occurred before cases 1 and 2. I spent some time in admiring the beauty of the vegetations, and *then it came to me to lay* down for myself the principle above stated, that such a vegetation, so fully developed, had no normal place in the bladder, and that, in the absence of other known causes, it was *wise to conclude that this profuse* abnormal vegetation was the cause of the catalepsy, from the irritation it caused to the central nervous system—analogous to a person wanting to pass water all the time. This, kept up for a long time, as it had been, seemed to be the exciting factor of the neurosis.

Acting on this principle, I injected a teacupful of a warm, saturated, watery solution of benzoate of soda and salicylate of soda, equal parts. I taught her daughter to do this three times a week. I think I saw her once or twice only. But Dr. Wheeler reported to me that she never had another neurotic symptom after the first application, but died of some other complaint a year or two later.

Remarks.—Perhaps some one may ask, Have you found in newly voided urine these vegetations without the neurosis? Answer. I have. Case 1 had no neurosis—but I have no doubt, had it been allowed to run on, it might. If the constitution is strong enough to bear it, no neurosis may occur. People have the gravel of the blood latent in rheumatism without a rheumatic attack, until a cold brings it out; or gravel of the lungs latent and no asthma or hay fever, until some exciting cause brings it on. Or, to use another simile, a gun does not go off, even though loaded, unless fired. How often have guns, *said to be not loaded, gone off* and killed people from the hands of those who are in sport. The load is the predisposing cause of the explosion of the gun, and the pulling of the trigger is the exciting cause.

My old teacher, Prof. Hodge, of pessary fame, used to tell of a Philadelphia market-woman who did business for years, and slept in her market wagon summer and winter at night, on Market Street. Yet her uterus, all this time, was completely prolapsed down between her knees, and she said she suffered none from it! So it may be that these vesical vegetations are not always the cause of neurotic trouble, but to get rid of fetid urine in the bladder, unless there is stone or some organic disease, or dirty catheter, in my opinion you must get rid of the vegetations which produce it, and can be surely diagnosticated only by the use of the microscope, not as a toy, but as an instrument of precision of positive gynecological value, not to be despised nor counted out.

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[4] It was allowed to remain as long as it could be retained—three hours in one instance

Postlude.—In Case 2 there was a spasmodic condition of the urethra—urethrismus—due to these vegetations, which are sometimes found with stone in the bladder—but there was no evidence of stone in any of these cases. If I can be allowed in this connection the privilege, I would like to hint the desirability of studying the morphology of intravesical urine in all cases of urethrismus, so as to be sure that these vegetations are not overlooked.

Case of Suppressed Menstruation.—January 26, 1892, a large maiden of 25 years, in the midst of menses, took, at midday, a long ride in a dogcart. She was very much chilled and disagreeably shaken up. The menses ceased to flow. At night she was very much oppressed in breathing, and in a good deal of stomachic distress. About midnight she vomited blood largely. As she went to the bath-room the floor was stained with blood. In the bath-room she fainted and fell to the floor. My son, Dr. John A. Cutter, found her in surroundings that looked as if murder had been committed. Though her history was clear, still it was desirable to know that the hæmorrhage was not of a tuberculous complication. Having no microscope with him, he sent for me and a clinical microscope, and I found that while the morphology of the blood was not normal, it was not tuberculous. This made the diagnosis clear. Though the patient was very ill and about moribund, she is now recovered completely.

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GYNIC DISEASES HAVE NOTHING TO DO WITH INSANITY(?)

At a late meeting of the New York State Medical Society, a reader took the above ground strongly. He based it mainly on the statistics of insanity, foreign and domestic, which showed that as many women were insane as men, who had no uteri to get out of order; that if gynic diseases operated to produce insanity, the proportion ought to be larger of alien women to alien men; that hence, it was useless for alienists to become gynecologists as there was no call for their work.

Now, in reply to this, I would like to see some joint expression of our Society based on facts to show its fallacy or not. Some points to be raised are as follows:

1. These statistics were made by those who confessedly knew not about gynecology.

2. Except from outside pressure alienists will not make gynecological examinations nor studies.

3. To insist that there are no gynecological lesions in insane women, because they have not been looked for and thus not found, is to beg the question and amounts to no reason whatever for the position.

4. The writer and others claim that gynecological affections, by the withdrawal of nerve force, virtue or dynamos, do weaken the mind so that some women become insane from this cause as experience has shown.

5. Insane women who have had gynecological diseases cured, have become sane.

6. A physician told a patient of mine that he had studied six months in an insane asylum, where, out of 400 women he found 300 with female diseases, and that in his opinion they would not have been insane if their local troubles had been properly treated at the outset at home.

7. In my opinion lesions of the sexual organs are causes of insanity in men. I have found neurasthenia in men to come from a urinary catarrh of the spermatic ducts. This catarrh is in three forms, I think: 1. Proto-plasmic, like the white of egg. 2. Skeins and filaments more or less marked. 3. Indian club shaped. (For its detection use one inch objectives.) Out of 100 cases at Flushing, L. I., Male Insane Asylum, I found at least eighty who had in their urine one, two or three alone, or combined in sufficient quantity (provided they were fair samples) to produce neurasthenia, which is thus shown to be one cause of insanity. If this is so, may not this catarrh explain why there are as many men as women insane? And from parallel sexual causes, too.

8. An insane woman who had been to an Alienist Asylum for treatment was not even examined gynecologically. She paid her bills. After a considerable time she was discharged as uncured. She was found to have anteversion complete and a hyperæsthetic uterus with 3½ inches depth of cavity. She was treated with iodoform vectors till the hyperæsthesia was removed, and the uterus reduced to normal size. She then wore my stem pessary for a few months and is now entirely cured. She was so grateful to her physician, Dr. Wheeler, of Chelsea, that she wrote and desired to publish a letter of gratitude to him for her complete restoration to health and reason. I saw this case in consultation with Dr. Wheeler, who carried out my plan, and can give if he will, the full particulars.

9. I think the reader, above referred to, should be answered also as he threw ridicule on gynecologists by saying that there was only one time when a man should pass through or be acquainted with the vagina, *to-wit, at birth!* Unless better reasons than these are given, I for one, shall consider the alienists as derelict in their duties to the unfortunate women under their charge.

I know of no other body in the world better entitled to take up the gauntlet thus thrown down than this Society, which was the first in the world to take up especially the study of women's diseases—insanity included.

1730 Broadway, New York, Feb. 8, 1892.

GRADUATES IN MEDICINE, 1892.—Southern Medical College, 34; St. Louis Medical College, 18; St. Louis College of Physicians and Surgeons, 83; Missouri Medical College, 14; Medical Department, University of Tennessee, 101; Medical Department, University of New York, 150; Meharry Medical College, 25; Medical Department, University of Nashville, 150.

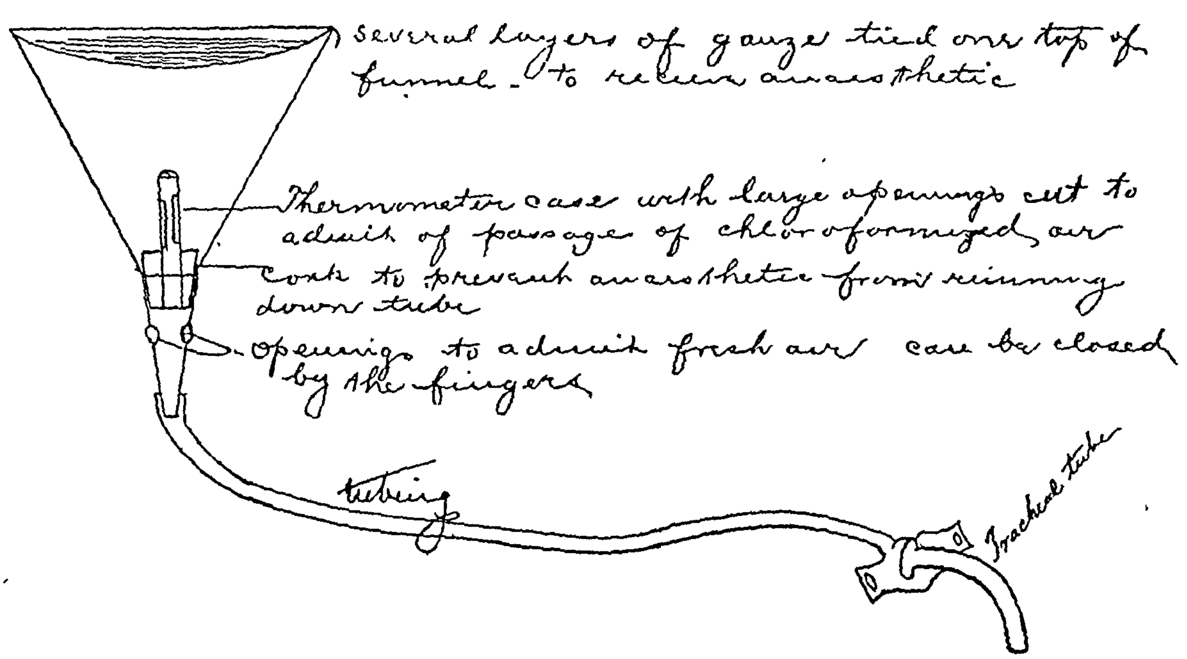
DERASSE reports a pregnancy which he recently attended at full term, the woman being in her sixtieth year. Dr. A. O. Barnes, of St. Joseph, ten years ago reported a case in the *Medical Standard* of a woman aged sixty-five who went to full term and was successfully delivered.

A CASE OF LARYNGEAL GROWTH.

BY F. C. RAYNOR, M.D.,
ASSISTANT SURGEON SKIN AND THROAT DEPARTMENT, BROOKLYN EYE AND EAR HOSPITAL.

The following history of a case of laryngeal growth presents unusual and interesting features, and I therefore bring it before the Association for consideration:

Ida M. M., age 12, school girl. came under the care of Dr. Sherwell and myself at the Skin and Throat Clinic of the Brooklyn Eye and Ear Hospital, July 18, 1889. She complained of hoarseness, slight hacking cough, and dyspnœa on exertion, which she had first noticed about six months previous. She was small for her age, and somewhat anæmic; her mother died of phthisis, father and two sisters healthy. On laryngoscopical examination was found a papillomatous growth on the top of the right vocal cord, near the anterior commissure. It extended upward into the ventricle, was oblong in shape and had an attachment of about three-eighths by one-fourth inches. It was pale in color, contrasting strongly with the adjacent tissues, which were all congested. She was put on tonics and sedative applications made, and from time to time instruments were passed into the larynx for the purpose of establishing toleration prior to an attempt at removal. Meanwhile the tumor was growing, the voice reduced to a whisper, dyspnœa increasing and the irritability not subsiding, and after having failed with several instruments, including Dr. Sherwell's, which usually answers the purpose admirably, I was forced to make several "snap shots" with Mackenzie's cutting forceps, and succeeded in removing part of the growth, with corresponding relief, and without damaging normal tissues. Cocaine was of no service whatever; the mental condition of the patient seeming to be more at fault than any local hyperæsthesia. The sedative applications were continued and occasional attempt at removal made (sometimes partially successful, oftener not), until the middle of October, when at Dr. Sherwell's suggestion, I began the insufflation of salicylic acid diluted with powdered acacia, in the proportion of one part acid, three parts acacia. Salicylic acid acts so well in reducing epithelial and warty growths on the skin, that it was hoped it might prove equally successful in treating these growths when arising from mucous membrane. The applications were as a rule, well borne, only a slight cough being produced, occasionally a momentary spasm. On November 9, during an application at my office, she choked. I saw at once that this was no ordinary spasm, and surmising that the growth had become impacted in the glottis, by the inspiratory efforts of the patient, I sent post haste for Dr. Sherwell and his tracheotomy instruments. Meanwhile the girl became cyanotic, lost consciousness, efforts at respiration became less and less, while I stood by, knife in hand ready to make an opening in the trachea without formality in case they ceased altogether. Just as she stopped breathing, Dr. Sherwell arrived, and in the shortest possible time a tube was inserted, the patient inverted, artificial respiration performed, and in a few minutes she was breathing naturally; then we finished the operation. Bleeding vessels were ligated, the lips of the wound approximated and a dressing of iodoform gauze applied. Fortunately, Dr. Gildersleeve, who also has an office in the house where mine is located, was in, and he rendered valuable assistance. The family of the patient were notified of what had occurred, and were advised to have her taken to the Brooklyn Hospital for operation, to which they consented, and the patient was accordingly removed. The tracheotomy wound had healed nicely, and on the twentieth thyrotomy was performed, Dr. Sherwell operating, assisted by the house-staff and myself. Anæsthesia was produced by chloroform, administered through the tracheotomy tube. We tried ether at first, but it occasioned so much coughing that it was abandoned. Not being provided with a special tracheal inhaler, I constructed one out of a pint tin funnel, an old thermometer case, a cork, piece of gauze and a yard of drainage tubing, which answered the purpose admirably. Blood was prevented from entering the trachea, by the passing above the tube of a small piece of sponge, to which was attached a


several layers of gauze tied over top of funnel - to receive anaesthetic
Thermometer case with large openings cut to admit of passage of chloroformized air
Cork to prevent anaesthetic from running down tube
Openings to admit fresh air can be closed by the fingers
tubing
Tracheal tube

ligature, to guard against its accidental passage into the trachea or œsophagus. For the benefit of those who may be placed in a similar position, I show a rough drawing of the inhaler, which can be made by any one, in a few minutes, without other tools than a pocket knife and a pair of scissors. The growth was removed piecemeal, by forceps and scissors, and its site and even beyond thoroughly curetted with a sharp curette. Bleeding was controlled by hot water and pressure, the wound approximated by silk sutures and the patient put to bed. She bore the operation nicely and recovery was uneventful. The tracheotomy tube was removed on the second day after the operation, and the wound allowed to close. She left the hospital on the 29th with the wound healed, mobility of cords about half of normal, voice a clear whisper. The mucous membrane was thickened in places, and it was feared that a return would take place. I show here the portion removed by thyrotomy, about half as much more I removed with the Mackenzie forcep. Following is the microscopical report of the specimen by Dr. J. M. Van Cott, of the Long Island College Hospital. "Examination of the material from throat of your patient reveals it to be composed of vascular pedicles covered with a layer of compound, squamous epithelium. It is a benign growth and belongs to the order of polypi." This hardly agrees with the picture presented by the growth *in situ*, for it was that of a typical papilloma; it may be explained by the fact stated by Lennox Browne, that "not unfrequently more than one variety is found in different sections of a specimen." (Dis. Throat and Nose, 3d edit., p. 450.)

The patient was not seen again until February 4, 1890, when I was called to her house. She had caught cold four days before, had a sore throat, and was suffering extremely from dyspnœa. The laryngoscope showed general congestion, and irregular thickening of all the tissues, but no well defined growth. Believing this to be a good case for intubation, I sent for Dr. McNaughton, who has done considerable work in that line, and he concurring in my opinion, inserted the largest size child's tube. This was coughed out twice, but finally was retained much to the relief of the patient. On the morning of the fifth, she had a severe attack of coughing and dislodged the tube and in her efforts to replace it, she pushed the tube down the œsophagus. The breathing again becoming difficult, a small adult tube was introduced with complete relief. The tube was worn five days, when owing to her inability to take sufficient nourishment it was withdrawn. It accomplished its purpose, however, for she afterward breathed comfortably. During this time the temperature ranged from 101 to 103; there was a dry hacking cough, but nothing abnormal could be detected in the lungs, the presence of the tube rendering auscultation difficult and uncertain. On the 15th, I detected tubular respiration over the left lower lobe posteriorly, and on the 17th, râles of various sorts. I may say here that the lung never cleared up. She went along fairly comfortable, being up and about the house, moderate appetite, slight fever, until the 1st of March when she again caught cold, had a rise of temperature and increasing dyspnœa, so that on the fourth it was again necessary to intubate. One day's wearing of the tube relieved all urgent symptoms, and then matters again pursued a quiet and gradually downward course. On the sixth of June, she passed per rectum, the tube swallowed February 5, its presence not being felt *until shortly before its expulsion*. In the early morning of June 15, she had a severe attack of dyspnœa, and I was sent for, but the child died before my arrival.

In presenting the report of this case to the Association, it is not my purpose to deal exhaustively with laryngeal growths in general, or this one in particular; such a course might interest a society of specialists, but would only weary the general practitioner. Still there are a few points, which I think can be profitably considered, and the first, and to me the most forcible one is *endolaryngeal treatment is not always such a simple matter as it appears to be.* I do not refer to operative procedures, for I think no one should attempt those without first having had considerable experience in general laryngological work; but the application of astringents with a brush, the insufflation of powders, etc., are sometimes followed by an amount of reaction that is alarming. One can never tell in advance how his patient will be affected, the same person behaving differently, on different occasions, as in this case. Knowing that salicylic acid was somewhat irritating, the first applications were made very cautiously, and with everything in readiness for extreme measures, but she bore them so well, that we relaxed our vigilence, proceeded boldly with the treatment, with the result given in the history. I have made many applications to the larynx, both before and since the above experience, without serious consequences, but the lesson taught that day has not been forgotten, and my tracheotomy instruments are always ready for instant use. *The return of laryngeal obstruction by a new growth* is also a matter of interest. While it is by no means rare that tumors of this kind reappear after removal, or similar growths spring up in other parts of the larynx, the thoroughness of the removal, the change in the appearance of the growth, together with the supervention of phthisis pulmonalis, leads me to believe that a deposit of tubercle was the cause of the obstruction, rather than a modified papilloma. A microscopical examination would have settled this point, but a removal of the larynx was not permitted. The family tendency to rapid tubercular formation is further shown by the death from phthisis of the patient's sister, æt 16 (reported above as healthy), which occurred in August 1890, after a four month's illness. *The immediate relief by intubation* shows the value of O'Dwyer's procedure in similar cases, for without it, we would have been obliged to open the trachea. *The length of time the swallowed tube was retained in the alimentary canal*, and the absence of discomfort from its presence, are worthy of note. By courtesy of Dr. McNaughton, I am enabled to show you the tube, and you will see how slightly it was injured by its long subjection to the action of the intestinal contents. I have purposely omitted any reference to the medicinal treatment in the latter stages, for it was of the usual character given to phthisical patients and requires no special mention.

169 State St., Jan. 12, 1892.

WHO SHALL PRESCRIBE GLASSES FOR THE CORRECTION OF ERRORS OF REFRACTION?

BY A. C. SIMONTON, M. D.,

OF SAN JOSE, CAL.

There ought to be but one answer to the above question—those who are competent. In fact, incompetent persons have no business prescribing for any of the physical ailments of mankind. But right here, in the matter of prescribing glasses for the correction of errors of refraction, is carried on one of the grandest pieces of quackery in the United States. Every individual who perchance offers for sale in the market spectacles, be they few or many, assumes to fill the rôle of oculist in diagnosing optical conditions and deciding what manner of glasses people shall wear, and the smaller the amount of knowledge they possess the greater the assurance with which they reach conclusions.

There is scarcely a jeweler in all the land that does not dub himself optician, perchance because he keeps a few spectacles to sell. But he attempts as a rule, by the use of that word, to convey the idea that he also is competent to examine the eye and adjust glasses for its varied optical conditions. Now, while a jeweler may be an optician in the very limited sense of vending spectacles and possibly a few other optical instruments, in what manner does this qualify him in the science of optics?

The word optician, in the better and broader sense, means an individual versed in the science of physical optics and engaged in the manufacture of optical instruments. A man may, however, perform many parts of the work about an optician's establishment and know nothing of the laws of optics. Running a piece of machinery that will grind a spherical surface on a piece of glass requires no knowledge of optics, and in nowise qualifies the man to examine eyes for errors of refraction. The scientific manufacturing optician does understand physical optics, but being conversant with physical optics does not qualify him in regard to physiological optics. We are dealing with more than an optical instrument when dealing with the human eye. It is not a mere camera obscura; it possesses nerves, blood vessels and muscles, along with its refracting media, and these anatomical, physiological, and physical arrangements by which this organ performs its important function are the most delicate and intricate of any of the structures of the human organism. How important that all the parts act in harmony. How does the scientific optician, even, know that the physiological functions of the various structures of the eye are normally performed when assuming to fit a pair of glasses?

The scientific optician can do nothing more than mechanically, investigate the refractive condition of the eye without taking into account the many sources of error that may mask and vitiate his finding from a physiological standpoint. If the individual conversant with the laws of optics can do no more than this what shall we expect from the legions of jewelers, druggists, Jew peddlers, and street fakirs and others who are pretending to fit glasses to the human eye, most of them with not the remotest knowledge of the science of optics? Oculists who make errors of refraction a part of their life's study, time and again find it extremely difficult to reach satisfactory conclusions in these cases.

Let us suppose the oculist is examining an eye for astigmatism, he finds the accommodation very unsteady; first the lens is adjusted to one meridian then to another, whirling around the astigmatic card in such manner as to result in confusion. What shall he do? Understanding the physiology of the organ and certain therapeutic laws he sets the accommodation as a factor out of the way by the use of atropia. He now reaches his conclusions in regard to the eye as he would a mechanical optical instrument; but this is not all, just at this point comes in the necessity of fine discrimination as to what amount of correction that eye will bear when the physiological function of the ciliary muscle returns. What would the optician, jeweler, or spectacle peddler do in such a case? A large percentage of them would presume to guess at something and give the patient glasses, for as I heard one of them say recently, "we must fit glasses in order to be in the swim—in order to sell our share of them." There it is, because jewelers keep glasses to sell and a few pretend to fit glasses, others must.

In cases of lenticular astigmatism from irregular action of the ciliary muscle how would the optician handle the case? In cases of spasm of accommodation where the emmetropic eye may seem to be myopic, or even a hypermetropic eye seem to be myopic how do the spectacle venders manage them? Here without doubt they must be led into error. Not only must persons unable to detect and overcome these physiological sources of error be led astray in the cases mentioned, but even in the simplest cases they frequently give to people glasses that they should not wear. It is an almost every day observation to find people wearing glasses not suited to their age or optical condition.

What are the qualifications that ninety-nine hundredths of the self-styled opticians possess who are pretending to fit glasses in every city, town and village in the land? They have given the subject no such systematic study as would qualify them from the standpoint of physical optics alone to tamper with the most delicate of the organs of special sense, let alone the fact that their knowledge of the physiological factors in the case stands a dead blank. Their qualifications as a rule, consist in a stock of spectacles and nose glasses from some manufacturing house, along with their specially scientific optometer and a few pages of instructions which are a regular *multum in parvo* or short cut to the science of optics on the same principal as the lightning calculator. In the course of one week the Professor is ready with his machine to relieve the aching eyes and heads of the unfortunates with optical errors. If this is not quackery, what is?

Not only do spectacle venders commit errors continually in regard to the amount and kind of refractive error, but they palm off on to their patrons, ignorantly I suppose, a large percentage of incorrectly ground glasses, such as never should be placed before a human eye.

Dishonest manufacturers are culpable in this connection. There should be a law against offering in the market imperfectly ground and imperfectly mounted lenses to be used before the human eye, to its detriment, always.

All manufacturers know full well to what extent this, worse than swindle, is carried on. I do not say that all engage in it. Competition may be sharp, but there should be no excuse for a manufacturer sending out optical goods which he knows will damage the eye that uses them. Mere cheapness has no right to be considered here.

In these days of legislation for the protection of the "dear people" from charlatanry generally, I am not sure but a little of it along the line I have been discussing would be wholesome. Why should not men who prescribe for refractive errors of the human eye be qualified as well as those who prescribe for other conditions of this organ? Are these matters to be so lightly considered when asthenopia with its many neuralgic accompaniments, many inflammatory conditions, and the different forms of strabismus are the frequent results of errors of refraction? Is it not reasonable, from every stand point, to say that this business belongs to the oculist who, alone, can be prepared to comprehend and intelligently meet all the requirements?

I can not better close this article than by making a quotation from the optical catalogue of James W. Queen & Co., of Philadelphia, under the heading of "How to Get Glasses." This is one of the most reliable optical manufacturing houses in America. I quote as follows: "When a person suspects or believes that his eyes may be benefited by the use of glasses, the best thing for him to do is, of course, to consult an oculist, that is, a physician acquainted with the structure and behavior of the human body in health and disease and who possesses special knowledge and skill with reference to the eye. The oculist will determine if glasses are necessary, what glasses will suit best and how much relief they may be expected to afford, and will furnish a formula for the glasses needed. Then the optician, with his mechanical appliances and skill, will be able to supply exactly the glass required. If the person desiring glasses neglects to consult an oculist, the optician may by trial, be able to furnish him glasses that will give relief, * * * but the optician should earnestly advise a person suffering from astigmatism, or who is very near-sighted, or whose glasses need changing very frequently, or whose symptoms indicate some disease of the eye to apply at once to an oculist. No conscientious optician will sell unsuitable glasses simply to get the money they bring regardless of their effect upon the eyes of his customer."

If this is the advice of one of the best manufacturing opticians in America, what shall we say of the thousands of incompetents who are fitting glasses today all over the land? They do not take the advice of James W. Queen & Co., neither have many of them the conscience mentioned. They are in the field to sell spectacles, and the consequences may take care of themselves.

THE VALUE OF PEROXIDE OF HYDROGEN IN THE TREATMENT OF CHRONIC GONORRHŒA, ILLUSTRATED BY A CASE.

BY WILLIAM ROBERTS, M.D.,
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During the past few years, the many articles on new drugs in the treatment of gonorrhœa leave nothing to be desired in this way. The present article contains nothing new, but simply gives the history of a case of chronic gonorrhœa arrested by the use of peroxide of hydrogen—a drug that is "going the rounds," probably to be discarded by reason of its being so unhandy and so little understood.

The following case might serve to illustrate the value of peroxide of hydrogen, when used under conditions favorable to the preservation of the drug.

J. H., citizen, age 23, contracted a gonorrhœa March 20, 1890, and received the usual orthodox treatment by internal medication up to July 7, 1890, the date at which the patient came under my observation. I found a subacute gonorrhœa, which was somewhat relieved by urethral injections, including the iodoformi et tannic acid injection of Dr. Otis.

On August 15, 1890, patient complained of difficult micturition, and upon examining the urethral canal, I found the following condition:

Size of urethra at bulb, No. 32 French; 4 inches from meatus a No. 21 stricture; meatus contracted to No. 20.

The constriction at the meatus was relieved by incision, and the stricture readily yielded to gradual dilatation, and on August 31, 1890, a No. 31 sound was passed without pain. On September 1, 1890, an examination of the urethral canal showed the presence of a small ulcer at the site of the old stricture, and stimulating injections were ordered—without, however, relieving the "morning drop." This drop I examined microscopically, and found pus and mucus corpuscles, with small gonorrhœal threads.

On December 10, 1890, I again examined the urethra, and found the conditions about the same. I had tried the whole list of antigonorrhœal remedies, including the medicated urethral bougies and the passage of steel sounds, and was somewhat puzzled to relieve the obstinate form which the disease had assumed.

On January 26, 1891, I commenced the use of Marchand's peroxide of hydrogen, 15 vol., and "glycozone," with following results: Two drachms of a mixture of ℞. Peroxide of hydrogen, ℥ss; aqua, ʒjss, M., was used to distend the urethra, and held for thirty seconds, then allowed to escape. The decomposition of the H_2O_2 was very active, showing the presence of pus. I then injected 1 drachm, which was allowed to remain in the canal two minutes. I repeated this procedure t. i. d., and at bedtime injected 1 drachm of "glycozone." This treatment was pursued up to February 9, 1891, when there was no discharge, and the patient declared himself cured.

I had watched this case with great interest, for it was the most obstinate one I had ever seen in not yielding to some one of the many lauded cures for chronic gonorrhœa. During seven months the patient had been under constant treatment, to find at the end that a three weeks' course of treatment by peroxide of hydrogen terminated the case quite satisfactorily.

The above data might naturally turn the reader's thoughts to the nature of the remedial agent that succeeded where all others had failed.

The peroxide of hydrogen used was that prepared by Chas. Marchand of New York. The chemistry of this compound together with the pathological conditions it may be applied to, I will leave to the many advertising agents and will simply state the care with which the preparation should be preserved; for there are factors which utterly destroy the medicinal properties of this valuable agent.

Upon receiving the samples I used, I placed them in a room having a uniform temperature of 52° F. Upon opening the bottles the corks were forced out as though they had been bottled under pressure—this pressure was very slight—but by it we may determine in a general way the amount of oxygen set free since the article was bottled. The liberation of oxygen is caused by a temperature above 59° F.—hence the necessity for keeping the preparation below this temperature, for upon the oxygen depends the active ingredient.

In the treatment of the case above quoted, I administered the medicinal agent personally in the room in which the preparation was kept. It might be said, that had this precaution been taken with the other injections, they would have succeeded; but having every reason to believe that my directions were rigorously carried out, I only took the precaution of personal supervision on account of the easy destruction of the agent I used, by a factor in every household i.e., *Heat!* Let Dr. Squibb be heard: "Changes in this solution are indicated by the formation of bubbles of gas which arise through the liquid or adhere to the sides of the bottle, and also by increased pressure within the bottles. At or below 59° F. the solution does not change for a long time, at 68° F., it does change, sometimes very rapidly giving off oxygen gas. The solution, whether strong or dilute, should be kept cool outside the window of the sickroom in winter, and on ice or in ice-water in summer. The bottles in which the solutions are contained must not be held in the hand, as its warmth will cause decomposition." Again, "If all pharmacists should undertake to keep it—or even all the prominent ones—it would soon share the fate of many other important medicines."

I publish the above with the concurrence of a medical friend.

THE MISSION OF THE ASSOCIATION OF THE MILITARY SURGEONS OF THE NATIONAL GUARD OF THE UNITED STATES.

BY N. SENN, M.D., Ph.D.,

OF CHICAGO,

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Surgeons of the National Guard, Ladies and Gentlemen: Every good citizen takes a just pride and a deep interest in the safety and prosperity of his country. His patriotism should bear a direct ratio to the degree of freedom and protection he enjoys and the richness of the natural resources within his reach. If freedom, protection, and prosperity are the elements which are productive of patriotism every citizen of the United States is or should be imbued with love and gratitude for his country and ready to defend it in times of danger. It is a great privilege to be a citizen of the greatest country on the face of the earth, and to belong to the most powerful and progressive nation in the world. Our country has taken a place in the front rank among the ruling nations. Its brief history is an unbroken record of unparalleled growth and prosperity. Its inhabitants composed of the best elements of most every civilized nation, have made good use of the wonderful opportunities presented and have built up cities and industries which have become a source of admiration and envy everywhere. Since the war of Independence and foundation of this, the greatest Republic, a little more than a century ago, we have become the leading nation, not through the influence of a large standing army, but by developing the unlimited resources within our legitimate reach, aided by a wise administration of the laws made by the people and for the people. During this short period of our existence as a nation we have taken an enviable position among the powers of the world, and our beautiful flag, the star-spangled banner, is respected and admired wherever it is unfolded. The Stars and Stripes are everywhere recognized as a symbol of liberty and equality. The history of the war of Independence, and more recently, of the war of the rebellion, has proved to the outside world that the American citizen is a born. soldier. Within a few months, during the late great conflict, large armies faced each other in deadly combat, and on each side a heroism was displayed never excelled before. Battles were fought such as the world never has seen before, nor since. The endurance, discipline, and courage of our citizen soldiers have become a matter of honorable record and have never and are not likely to be surpassed by any standing army. Our country came out of this great struggle greater than ever. There is now no North and no South. The "gray and the blue" celebrate their war experiences side by side, and relate their victories and defeats without sectional feeling. The star-spangled banner again floats over a harmonious and peaceful nation and is revered and loved as dearly in the South as in the North, and should the time come when it is in danger the whole country will rise in its defense. What a happy choice our forefathers made when they selected the eagle as the emblem of our country! Like the King of the Skies that knows no rival in his sphere, our country has outstripped the Old World in everything that pertains to the welfare of its people. The mingling of many nations has produced a race peculiarly well adapted for self-government. Our little standing army, composed of less than 25,000 men scattered in small detachments over a vast territory, has been seldom called into active service, except occasionally to subdue a hostile band of Indians on the frontier. Should an emergency arise necessitating military interference either in the defense of our borders or to crush anarchism, our standing army would be too small to answer the requirements.

Fortunately every true American citizen regards himself as a guardian of public peace ready to defend his rights and ever ready to protect the country of his birth or adoption. The National Guard of the United States, numbering about 100,000 citizen soldiers, is a military body of far reaching influence and great power. It is composed of the very best elements of society. It represents almost every profession, trade and business interests. It is composed of men who, under all circumstances, are loyal to their general and respective State governments. It constitutes an efficient police force scattered over this vast country from the Atlantic to the Pacific, and from the British Possessions to the Gulf of Mexico. The citizen soldiers have often been made the object of ridicule and even contempt, but they have shown their patriotism, courage and military efficiency on many critical occasions. When called upon they have never hesitated for a moment to sacrifice their personal interests and have obeyed their orders without a murmur, and discharged their duties as soldiers in a manner that would be a credit to professionals. By their prompt response when called into active service and by their soldierly behavior and action, they have nipped many a serious riot in the bud and have saved millions of property from destruction. As a rule the different States have made ample provision financially and otherwise to secure the service of an efficient National Guard. Should it become necessary to call out the whole force, an army of 100,000 men well equipped and well drilled could be concentrated in any part of the country ready for duty within three to five days. The many strikes and riots which have menaced the peace and personal and public property for a number of years have shown the necessity of an efficient National Guard. Every loyal and peace-loving citizen will consider it a privilege to contribute his share towards securing and maintaining such a force. Money paid out of the State Treasury for such a purpose is well invested. The general Government should do all in its power to favor the organization, maintenance and equipment of a strong National Guard in each State. The force should be doubled in five years. The services of at least one ex-officer of the regular army should be secured by each State. This officer should devote his whole time and energies in perfecting the organization within his jurisdiction, and in active service should have command of the State troops. Everything which can be made serviceable in elevating the standing and in increasing the efficiency of the National Guard will contribute largely toward bettering its medical service. There are now about five hundred medical officers connected with the National Guard service. This is an important part of our citizen soldiery. I have every reason to believe that most, if not all of these officers, are good physicians, but we must all admit that few of them possess the requisite qualifications and training to satisfactorily perform the manifold duties required of a military surgeon. With commendable zeal our regimental and company officers study their books on military tactics during their leisure hours and apply the knowledge thus gained week after week in drilling the men under their command until they become masters of the situation. The non-commissioned officers and privates receive regular instruction weekly, and once a year officers and soldiers spend a week or two in camp, review the work done during the year, make new plans for the future, and return home well versed in the art of war. What did the medical officers do all this time? Few, if any, made a serious study of standard works on Military Surgery and Hygiene. They attended the encampment, wrote prescriptions, or dispensed medicines to those who applied for treatment, occasionally dressed a wound or fractured limb, and only very few imparted their knowledge of the litter drill to a small detail of privates and non-commissioned officers. Most of them, even if they had a desire, had no opportunity to make themselves more proficient for camp or field service. I have often heard the complaint made that the line officers do not show proper respect for the military surgeon and do not treat him with becoming courtesy. How could it be otherwise? The only way to command respect in military circles, as in other positions in life, is by meritorious work, and this is appreciated everywhere. As soon as the military officer has the necessary advantages and inducements to perfect himself in his special work and makes good use of them, he will be recognized and his position in the service will be respected by officers and privates alike. It is apparent that something must be done to raise the standing and usefulness of the medical service. I know of no way of accomplishing this object except by concerted action. The military surgeons must educate themselves. We live in an age of organization, of united effort and concentration of work. The unparalleled advances in science, art and literature that have characterized the last decade are largely due to systematic united work. It is true that a great discovery or an important observation comes occasionally like a flash of lightning from a clear sky, the product of some fertile brain, but the greatest advances requiring thorough scientific investigation have been accomplished by the concerted action of many laboring with the same object in view. The stimulus imparted by the work and success of others is the motor which impels individual effort, and comparison of the results realized becomes either a source of gratification, or acts like a lash that arouses the latent force to renewed action. In our country nearly every profession, trade and business has now its local and national associations. Less than a year ago about fifty surgeons of the National Guard, representing fifteen States, met in the city of Chicago and organized the Association of Military Surgeons of the National Guard of the United States. All present were fully impressed with the necessity of such an Association and manifested a keen interest in its organization. The deliberations were characterized by harmony and a feeling of fraternity prevailed throughout, and every one returned to his respective field of labor with a consciousness that the first steps had been taken towards self-education in the duties of the military surgeon and in elevating the position of the medical staff in the estimation of the line officers.

To-day we have opened our first annual meeting in this beautiful city and have received such a warm welcome on part of the State, the city, the medical profession and citizens seldom extended to a scientific body. As an association we have not yet reached our first birthday, and yet we have attained a membership of over 200. A deep interest in the welfare and prosperity of our Association has been manifested outside of our ranks throughout the United States. The newspapers and medical journals have treated us with every mark of courtesy, and have brought our good work to the attention of military officers, the public, and the medical profession. The general government has encouraged us from the very beginning by detailing for our benefit a number of the oldest and most experienced surgeons to attend our meetings. We have eagerly availed ourselves of their wise counsel in planning the sphere of our work and will look to them in the future for instruction in the practical details of our duties as military surgeons. I am convinced that we have as a body the good will and moral support of the entire National Guard, and particularly of its officers. The future success of this Association is therefore assured, provided its members will do their duty towards themselves and the Association. It is my intention on this occasion to call your attention to some topics which should be earnestly discussed at this our first annual gathering, at the same time I desire to outline some of the work which should be accomplished in the near future by our united efforts, subjects which properly come under the title of this address: "The Mission of the Association of Military Surgeons of the National Guard of the United States."

State Association of Military Surgeons.—Our National Association should be the center of our actions and at its meetings a uniform plan for study, investigation and practice should be made and recommended for adoption to the different State Associations. If we do our work well it is only a matter of a few years before nearly every National Guard surgeon will be a member of this Association. The extent of our territory is so great that we can hardly expect an attendance of more than 150 or 200 at any of the annual meetings. The absent members will read our transactions, but will not become infused with the necessary stimulus for work which can only be imparted by being present at the meetings, taking part in the proceedings and coming in personal contact with the members. The actual work must be done nearer home, at shorter intervals, and in smaller meetings. I am strongly impressed with the necessity of the formation of an association of Military Surgeons in each State. These associations should be organized upon a uniform plan and should be legally chartered corporations and in affiliation with the National Association. Meetings should be held at least three times a year, one of them shortly before encampment, at which the work during camp life should be thoroughly planned. Litter drill, first aid to the wounded, camp sanitation and other matters pertaining to the welfare, usefulness and happiness of the civilian soldier should be freely and thoroughly discussed. Each one of these associations should be represented at the annual meeting of the National Association and report through one of its delegates the work done during the year, with recommendations and observations of interest to the national body. The State should not only furnish free transportation, but should also defray the actual expenses of each member attending these meetings.

Appointments by Competitive Examination.—Our Constitution very wisely provides that all National Guard surgeons holding a commission and in actual service are eligible to membership. For reasons which it is unnecessary to mention here, school legislation has been entirely ignored. It is our intention now to unite all military surgeons of the National Guard of this country into one great body for united effective work. We cannot legislate for the past, but we must use our combined influence to secure the best obtainable material for the medical staff in the future. In most of the States the appointment of military surgeons is virtually in the hands of the regimental commander. Personal friendship, political influence and social qualifications have often been more weighty in securing a commission than a thorough knowledge of the art and science of medicine and surgery and other qualifications necessary to make a good military surgeon. This is certainly not as it should be. A colonel is expected to know all about military tactics and discipline, but the law or usage which gives him the unlimited power to appoint his medical officers is a great evil and should be abolished if we expect to fill vacancies as they occur in the future with the best available material. The appointments should be made as in the regular army by competitive examination conducted by a board of medical officers. This can readily be accomplished as soon as each State has its own Association of Military Surgeons. Let each State Association appoint a board of examiners, composed of three members, which can conduct the examination of candidates at any of the regular meetings whenever it becomes necessary to fill a vacancy. As soon as it is generally known that appointments are made on merit and not by favoritism, the reputation of the medical department of the National Guard will be greatly enhanced in the estimation of the line officers, the medical profession, and the public. The standing of the medical officer in military circles and the community will be proportionate to the height of the standard fixed by the examination. When commissions are obtainable only after a thorough and satisfactory examination they will be of some value to their holders, and it will then be some honor to be known and seen as a military surgeon. The requirements of admission into the medical service of the National Guard should be gradually made so stringent that any one who gains entrance will be recognized as a scientific man and physician and surgeon of more than average ability. A commission obtained in this way will then be regarded as of far greater value than a diploma from any of our medical colleges. Let me express the hope that the time is not far distant when the regimental commander shall have no voice in the appointment of his surgeons, but when the door to the entrance into the medical service shall be carefully guarded by a competent medical board and only such candidates are permitted to pass who shall be a credit to the National Guard and an honor to the medical profession.

Medical Corps.—In most of our States the medical officer remains with the regiment, squadron or battery with which he first became identified. If he is connected with a regimental organization he may expect eventually to reach the rank of a major, but if he is attached to a smaller troop, promotion is out of question. It sometimes happens that the pleasant relations which first existed between the commanding officers and a surgeon for some reason or other are disturbed to the mutual detriment of both sides, rendering at the same time military life unpleasant. It is also often the case that military surgeons are placed on duty with their organization in localities much nearer the home of another colleague than his own, making it necessary to travel unnecessary distances to supply the command with medical aid. For these and other reasons it would be advisable to establish a medical corps in each State, to be under the supervision of the Surgeon General or a Medical Director who could detail the medical officers for duty as location and other circumstances might dictate. By making the medical officers independent of any particular regiment or smaller detachment many unpleasant experiences might be obviated and the medical service would be rendered more efficient, and often no inconsiderable expense to the State could be saved; at the same time the surgeons would make many additional pleasant acquaintances. I am very anxious that this subject should receive due attention not only here, but in the different State Associations.

Uniform of National Guard Surgeons.—In consequence of the too close identification of the military officer with the organization with which he is connected, National Guard surgeons, when assembled in a body, present a unique and picturesque appearance. Infantry, cavalry and artillery uniforms are worn, thus rendering it often impossible to distinguish between a line officer and a surgeon. It is desirable that this Association take some steps to adopt a uniform that shall be worn by all National Guard surgeons. As it is becoming more and more the policy of military officers to pattern as closely as possible after the regular army, it seems to me that the uniform of the surgeons of the regular army would be most appropriate, and that we recommend its adoption to the different State Associations. As military surgeons are not only doctors, but also military men, it is only proper that during the meetings of the State and National Associations the members should appear in uniform and greet and address each other during the session not as doctors, but as military men.

Original Research.—Military surgery is at present in a transitional stage. Human ingenuity has exerted itself to the utmost during the last few years in perfecting cannon, guns and other implements of destruction. The smokeless powder and the small calibre conical bullet surrounded by a steel mantel have revolutionized modern warfare. Rapid firing and certainty of aim at a great distance will make the battles of the future of short duration, but the loss of life and the number of disabled by wounds will be fearful. The bullet wounds that will come under the treatment of the Military Surgeon of future wars will present an entirely different aspect, and will call for different treatment than those inflicted by the old weapons. The modern bullet, by virtue of its great penetrating power, will either produce a speedily fatal wound or the injury it produces will be more amenable to successful treatment because it produces less contusion of the soft tissues and splintering of bone than the heavy bullet used in the past. Bruns, Bardeleben and others have made careful experimental researches concerning the effect of the new projectile, but this subject is not exhausted and there is plenty of room for original work by our members in this department of military surgery. The operative treatment of penetrating wounds of the chest and abdomen on the battle field offers another inviting field for original investigation. The various materials devised to dress wounds on the battle field have all their faults and merits, but none of them are perfect and I hope it will be left for some one of you to immortalize himself and this Association by devising a dressing that will answer every requirement on the battle field. The methods of transportation of the sick and wounded, the construction of tents and movable barracks are not closed chapters, and are only susceptible of improvement by original thought and investigation. More ingenuity has been displayed of late years in perfecting firearms and in the invention of machines for wholesale destruction of life than in devising ways and means in saving the lives of those seriously injured. It is our duty as military surgeons to counter-act as far as we can the horrors of war by devising life-saving operations and by protecting the injured against the dangers incident to traumatic infection. Antiseptic and aseptic surgery must be made more simple than they are now, in order that we may reap from them equal blessings in military as in civil practice. Enough has been said to show you that a Military Association of this kind can become an inestimable boon to mankind if some of its members will explore unknown regions and bring to light the priceless jewels of original thought and research. I hope that at each annual meeting at least one or two papers bristling with original ideas will be presented, and I am confident that some of them will be accepted as foundation-stones upon which will be erected the coming structure of modern Military Surgery.

Military Medical School.—For nearly one hundred years our Government has made ample provision for the education and practical training of the officers of the Army and Navy. The Naval Academy at Annapolis, and the Military Academy at West Point, are model institutions of their kind. Hundreds of young men have left these institutions with a thorough knowledge of the science and art of warfare, and many of them have become immortal as leaders of victorious armies in the history of this country. The students of these academies have always been selected from the cream of our population. From the time they enter these institutions they are in the service of our Government. The education is not only without expense to themselves, but they receive from the beginning a small salary which enables them to enjoy many of the pleasures of life. After their graduation they enter military service, with the rank and pay of second lieutenant. They are well prepared for their life work—they have passed through a thorough theoretical and practical training. They are respected and honored wherever duty compels them to go. How different with the medical officer of the United States Army! He has spent a number of years in a high school, academy or college, and three years or more in a medical college at his own expense. He is now required to pass a very rigid examination, and if successful is assigned to some small post, with the rank and pay of a first lieutenant. He is, as a matter of course, a good doctor, but knows nothing of military life and discipline. He is entirely ignorant of the many details of clerical work required of him, and has a most serious time before he can make out a report that will prove acceptable at headquarters in Washington. No wonder that he is made the laughing-stock in his little community until, by hard work and close observation, he has become initiated into military life and customs. He has paid for his education as a doctor, he must educate himself as a military surgeon. Is there any justice or excuse in discriminating to such an extent between a line officer and a surgeon of the regular army? Is it not about time that they should be treated alike and placed on the same level from the beginning to the end? All of the larger countries in the Old World have excellent military medical schools, where the army surgeons are trained not only as doctors, but also as military men. It is a burning shame that no such institution exists in this the greatest and richest country. Let us, as an Association and as individuals, do all in our power to secure proper recognition for our colleagues of the regular army. Let us use our influence with the officials at Washington and the members of Congress, and ask for the establishment of a model military medical school, in which the military surgeon of the future shall receive his education at the expense of the country for which he is to devote his life. Such a school should be located either at Chicago or St. Louis; both of these cities have excellent railroad facilities, and would furnish an abundance of clinical material. The East has the academies at West Point and Annapolis, let the West have the third National military educational institution. The cadets entering such a school should have a thorough preliminary education, and should be required to study medicine and surgery and the collateral branches for at least five years. The classes would be necessarily small, consequently each member could receive thorough hospital training for at least two years. The graduates would not only be well educated, successful doctors, but also military men, well prepared by practical training to commence their life work. It is well known that many of the surgeons of the regular army, for want of a proper stimulus derived from daily application of their knowledge, gradually lose their interest in their profession, and choose some other occupation in spending a great part of their leisure time. I know of nothing that would do more towards securing their interest in the progress of medicine and surgery than a three or four months' post-graduate course every five years in such an institution. The utility of such a school would also be greatly increased if its doors were thrown open for the National Guard surgeons, who should receive instruction free of expense. I have consulted several members of Congress in reference to the advisability of making an effort to secure the establishment of a military medical school, and I have been assured by all of them that should such a movement come through the proper channel, the request would receive favorable consideration. This important matter should be brought to the attention of the Government and the representatives in Congress, and I express the hope that in less than five years we shall have a military school in this country in which the coming military officers of the Army and Navy will receive a medical and military education which will prepare them fully to enter the service, and in which the surgeons of the Army and Navy and of the National Guard can receive from time to time the necessary post-graduate instruction.

International Congress of Military Surgeons.—The next year the eyes of the whole world will be turned towards this country. All nations will send visitors to the Columbian Exposition. Among them will be a fair percentage of medical men, and many military surgeons. It has occurred to me that it would be a good idea to utilize this opportunity, to take now the necessary initiatory steps towards the organization of an International Congress of Military Surgeons. That such an association is desirable no one will deny, that it can be effected through our young and vigorous Association few will doubt. It is difficult to realize what great things could be accomplished for the benefit of humanity, and the advancement of military surgery, by an association of military surgeons representing all nations. Should you think favorably of this suggestion, I would recommend the appointment of a committee representing as many nationalities as are at our disposal, with power to invite the different nations to send delegates to our next meeting. The delegates can be made members by invitation, and towards the close of the session the Congress could be organized. The Congress should meet as often as the World's Fair, and if possible in the same city. This would always insure a good attendance. Military surgery is a branch of the healing art which not only interests the medical profession, but it is also a subject which deeply concerns Governments, military men and the people at large. The military surgeon is in the employ of the Government, to which he is responsible for his behavior and actions. An International Congress of Military Surgeons would represent the most important branch of non-combatants, and would afford an opportunity to its members to form many personal acquaintances which would become a source of pleasure in times of peace, and of the greatest value and importance in case of war. I trust that this matter will receive your earnest attention during this session, and that in case the plan outlined is deemed feasible and desirable, every member of this Association will do all in his power towards its realization.

Surgeons of the National Guard:—Permit me, in conclusion, to thank you sincerely for the honor you have conferred upon me at the first meeting in electing me as your first presiding officer. It is an honor that I fully appreciate, and that I shall always remember with gratitude. I congratulate the Association upon its rapid growth and the bright outlook for its future success. I am sure that you will all join with me in thanking Col. Chancellor, the Chairman of the Committee of Arrangements, for the work he has done since our first meeting. To his untiring industry, and his earnest devotion to the task imposed upon him, is due the success of this our first annual meeting, the hearty welcome we have received and the many pleasures that await us. St. Louis has immortalized itself in the annals of our Association. The lavish hospitality we are enjoying here can never be duplicated until in the course of time, we again select this city as our place of meeting and Col. Chancellor as Chairman of the Committee of Arrangements. The success of an Association, like that of an individual, depends on hard, honest and persevering toil. Make the cause of this Association your own, and in less than five years the Association of Military Surgeons of the National Guard of the United States will be one of the largest, most influential and useful Associations in this country, honored and respected at home and abroad.

CLASSIFICATION OF DIARRHŒAS — ETIOLOGY AND PATHOLOGY OF SUMMER COMPLAINT.

Lecture delivered at the Fourth Special Course of the Chicago Policlinic.

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The diarrhœal diseases constitute a very large percentage of the diseases of infancy, and yet, in the majority of the text-books, they are discussed in the routine manner of years ago.

The recent advances in bacteriology and chemistry have not failed to throw much light upon the etiology and pathology of these diseases, and it is my desire in this course to consider them from a modern standpoint.

It is customary to speak of summer diarrhœa. I avoid the term diarrhœa, and use instead the term summer complaint. Summer complaint includes not only the diarrhœal forms of these diseases, but those forms characterized by constipation, and I hope to show you that many cases which are truly cases of summer complaint, with all the symptoms and the unfortunate results of summer complaint, are characterized from beginning to end by the symptom, constipation. The term summer complaint, therefore, is in this sense comprehensive enough to cover the ground.

Every diarrhœa which a baby may have is not a case of summer complaint, any more than every diarrhœa which an adult has is a case of cholera morbus. It becomes desirable for me to give you such a classification of diarrhœal diseases as will give you a clear idea of where I stand with reference to summer complaint, what I mean by it, and to what conditions my remarks may be addressed as regards the pathology and treatment of this particular disease.

The most scientific classification of diseases is based upon their etiology, and I beg to offer you a classification of the diarrhœal diseases framed on a sort of etiological basis. This classification is not complete. None of the classifications which have been given of diarrhœal diseases, particularly those of infants, have been satisfactory. Diarrhœal diseases are commonly divided into enteritis, gastro-enteritis, and colitis, upon the supposition that certain anatomical portions of the bowel are involved in the different cases. I hope to be able to show that there is no essential difference between colitis and enteritis, and that the symptoms by which we attempt to separate the one from the other are not due to a difference in the anatomical change of the bowel itself, and that therefore a classification upon an assumed pathology is incorrect, because the pathological conditions cannot be made recognizable with the clinical manifestations.

The classification which I have to offer is the following:

Diarrhœa produced by:

- I. Causes arising in tissue change. Nutritional disturbances.
  - 1. Rickets.
  - 2. Scurvy.
  - 3. Tuberculosis.
  - 4. Wasting diseases generally.
  - 5. Nervous diarrhœa.
- II. Poisons developed in the blood.
  - 1. Septicæmia.
  - 2. Specific infectious diseases.
    - *a*. Typhoid fever.
    - *b*. Tuberculosis (?).
    - *c*. Malaria.
    - *d*. Amœbic dysentery (?).
    - *e*. Influenza.
- III. Poisons developed in or on the intestinal walls.
  - 1. Diphtheria of the bowel.
  - 2. Amœbic dysentery.
  - 3. Thrush.
  - 4. Chronic ulceration of the bowels.
- IV. Poisons developed in the intestinal contents.
  - 1. Asiatic cholera.
  - 2. Summer complaint (infants).
  - 3. Cholera morbus (adults and older children).
  - 4. Typhoid fever (?).
  - 5. Amœbic dysentery.

Many of the diarrhœas met with in rickets and scurvy can be explained in no other way than by the assumption that they are produced directly by the nutritional changes themselves. A germicidal theory is untenable, and nothing within the bowels themselves can satisfactorily account for the phenomenon. No doubt, in many of the wasting diseases, diarrhœa is dependent upon similar causes. In every specific disease characterized by diarrhœa, the cause of that diarrhœa is due to a poison developed in the blood. The diarrhœa of typhoid fever is unquestionably produced, not by the ulcers which form in the bowels, but by the same poisons which produce the elevation of temperature; by the same poisons which produce irregularity of the heart's action; by the same poisons which produce bronchitis; by the same poisons which cause the eruption upon the body. It is entirely gratuitous to assume that because there is a lesion in the bowel, that that anatomical lesion is the cause of the diarrhœa which is present. Under the head of specific diseases which produce diarrhœa we have typhoid, malaria, tuberculosis, possibly amœbic dysentery, influenza, etc. The diarrhœa occurring in the course of a wound infection, of course, results from the poison circulating in the blood, and it is interesting to note that this diarrhœa may be either of the dysenteric type, or of the enteric type; that is, the movements may be small, mucous and bloody, or large and watery.

The Löffler bacillus makes no further incursion into the tissues, than the surface of the mucous membrane upon which it causes the diphtheritic false membrane to form. In diphtheria of the bowel therefore, the diarrhœa results from the poisons elaborated at the surface of the mucous membrane. In thrush of the bowel, which occasionally occurs, less frequently perhaps in this country than in France, a similar condition of affairs exists. Ulcers of the bowels, whatever be their origin, form an excellent nidus for the growth of microörganisms; their secretions nourish these organisms, and afford a papulum from which their poisons are elaborated. It is more than probable that the chronic forms of diarrhœa following summer complaint, and characterized by the formation of ulcers in the bowel, are maintained through poisons elaborated at the seat of the ulcers, rather than by the mechanical presence of the ulcers themselves. The recent researches of Councilman and Lafleur of Johns Hopkins, show that in amœbic dysentery, the amœbæ abound not only in the intestinal contents, but also in the ulcerated bowel itself.

The last class of diarrhœas is that in which the poison producing the diarrhœa is elaborated in the intestinal contents themselves. The recent researches of Councilman and Lafleur just referred to, show conclusively that amœbic dysentery is to be put in this class. Poisons can only be formed in the intestinal contents by pathological fermentations and putrefactions of those contents, induced by microörganisms.

With the foregoing classification and remarks in view, I should define summer complaint as a disease or group of diseases produced by poisons developed in the bowel contents and characterized ordinarily by diarrhœa, sometimes by constipation, frequently by fever, by depression of the heart, by engorgement of the kidneys, and by general nervous symptoms such as convulsions, coma, etc.

With this limiting definition in view I wish to consider with you to-day the etiology of summer complaint, and its pathology, including under the pathology, its morbid anatomy, chemistry and bacteriology. Upon the chemistry I wish to advocate a certain method of feeding which I have used continuously for five-years and with the greatest satisfaction.

First as to the etiology. We find that summer complaint is a disease par excellence of infancy; it occurs most frequently under the age of two years. If we divide the first two years of life into periods of six months each we find this disease most common in the second period, that is, between six months and a year. Why is this question of age so important? It is a factor which we must take into consideration, for it evidently has a great bearing on this question. An adult can eat generally what he pleases and it will not develop diarrhœal disease, but put a baby under similar conditions and that baby usually develops diarrhœa. Aside from all questions of diet and resistance, there must be something in that baby at that age which predisposes it to disturbance of the bowel. A child at that age is preëminently a growing animal; this is the period of growth *par excellence*; it is a time of life when the child is adding to its animal tissues; it therefore requires for its food a superabundance of animal matter. It requires, and naturally receives a larger proportion of animal food, that is to say albuminous material, than the adult does. And it is this very albuminous food, from which poisons that are capable of producing effects through the medium of the central nervous system, may be elaborated by microörganisms. All ptomaines and toxalbumins contain nitrogen, and must therefore be formed from the albuminous foods. You cannot produce out of starch a poison that will cause constipation, or fever, or cardiac depression, or any other nervous symptom, except those produced by alcohol, which is the only type of poison that can be produced from starch. The predominance of albuminous food necessary for the growing infant, is therefore a constant menace to it. The rapidly growing infant must have a highly developed absorptive apparatus. We find that the absorptive tissue of the intestinal tract, exists in a greater amount relatively in the infant than in the adult. The so-called lymphoid tissue, that growth which makes up follicles, and which is scattered throughout the alimentary canal, is distinctly an absorptive tissue. We must necessarily have for the infant, if it is to grow rapidly, a superabundance of such tissue, and that superabundance of absorptive tissue is present, but it carries with it its counterbalance of danger. If we have this absorptive tissue there which can absorb the material for growth, it can and does absorb the material for disease. Poisons formed in the intestine therefore gain a much readier entrance into the organism of the infant than the adult. So the important factor of age alone is a predisposing cause of diarrhœal disease because of the preponderance of proteids in the food of the infant, and because of the high development of its absorptive apparatus and also because of the diminished resistance, which the tender age implies.

The reason why deaths from diarrhœal disease do not occur more frequently in the first six months than in the next six months is because children are usually more properly fed during the earlier period. Children may be kept at the breast exclusively during the first six months, but rarely are they so kept at the breast during the second six months.

Prominent among the conditions that produce this disease I would mention bad hygienic surroundings. People who live in poverty have more of this trouble than those who are more favored. Those of us whose work is in the large cities, come in contact with the tenement population who live, sometimes, one or more families in a single room and whose surroundings are such that they cannot be clean. Any one who had to endure the surroundings and the mental depression these people have to endure would be dirty. And they are dirty, they can't help it; what they eat is dirty, what they give to their children is dirty, and bowel troubles among their little ones are frequent.

Another prominent factor in this disease is artificial feeding. Take Hope's very instructive report; out of a thousand cases of death from summer complaint he found only thirty who had been fed exclusively upon the breast. Meinert of Dresden, investigated 602 cases of fatal summer complaint and only twenty-four out of these had been fed exclusively upon breast milk. This tells the tale we all know; I don't care to dwell upon it.

The question of atmospheric heat is very important. The term summer complaint has been given because the disease occurs most frequently in hot weather, but we have cases in winter, so that the term summer complaint is only true so far as it indicates that the trouble occurs most commonly in summer. Here come in the statistics worked out by Seibert of New York and Meinert of Dresden. The mortality from this disease in May is but slightly greater than that in January, and yet the mean temperature is considerably higher. In June there is a considerable increase in the mortality, and in July a *very great increase in the mortality from this disease*. The observations of Seibert and Meinert show very clearly that as the mean atmospheric temperature approaches 60° F. diarrhœal diseases among infants increase in frequency, and when the minimum daily temperature does not fall below 60° F. these disorders become epidemic. The magic figure is 60; this is the temperature at which most microörganisms begin to thrive. At 32° degrees, or the freezing point, microörganisms remain quiescent, but as the temperature rises their activity increases, and when it reaches 60° they have reached a point where they begin to grow rapidly, and when the thermometer is above 60 their growth is maintained and they rapidly increase; if below 60 they are retarded in growth. It can hardly be doubted but that very hot weather has also a direct detrimental influence upon the infant. Weaning is frequently mentioned as a cause of diarrhœa. There is nothing in the act of weaning itself to cause diarrhœa. But when a child is weaned, it receives a larger quantity of so-called "table-diet," with a corresponding increase in the chances for introducing pathogenetic microörganisms.

Direct infection certainly plays an important rôle. In a foundling asylum, with which I was connected several years ago, we at one time received a baby with diarrhœa, characterized by a peculiar kind of stools. That baby was passing five or six, dark brown, terribly offensive stools daily. Not another child in the institution had just such stools, although they all had diarrhœa, but within three days there were several cases just like the new one. I am satisfied that the particular kind of diarrhœa present in that case was produced by a particular kind of germ, whether one, two or three I don't know, but I believe that that germ got into the food of the other children and produced the same sort of disorder. In other words, there was a direct infection. In that asylum, I instituted a custom of putting the napkins, as soon as they were soiled, into a tub containing a solution of corrosive sublimate. The result was not only a deodorizing of the offensive diapers, but an improvement in the condition of the babies. I am satisfied that infection in the production of summer complaint, is very important, and one of the factors which we often overlook. Do not forget that infection can occur by way of the anus.

Holt, of New York, who has done an immense amount of work in this line, holds that there is always a preliminary dyspepsia in this disease; that before diarrhœa commences the child for several days has abnormal passages, with possibly some disturbance of the stomach; has a little nausea; its appetite is deranged, and an indefinite general something is present which he calls a preliminary dyspepsia, and he regards this condition as a most important factor in the causation of diarrhœa. I can readily understand that if there is present a catarrhal condition of the bowels, an abnormal condition of the secretions of the bowels, that this may favor the development of the microörganisms producing this disease, but I cannot say that my own clinical observation fully upholds this particular point; I cannot say that in the majority of these cases coming under my observation there is a preliminary dyspepsia. I have looked for it, but I am unable from clinical observation to confirm Holt's statement in toto. Nevertheless, there is in a minority of the cases a preliminary abnormal stage, the nature of which I do not understand, which precedes the actual diarrhœa.

The constitutional condition of the child must also be considered. It is more liable to diarrhœa if its resistance to disease has been diminished by premature birth, syphilis, tuberculosis, rickets, scurvy, or preceding exhausting diseases of any kind. I feel that we are in a position to state that all the etiological factors in the production of summer complaint may be classified under three heads: First, means which favor the contamination of food by microorganisms, and their growth in that food. Second, means favoring the introduction of microörganisms into the intestinal canal and the formation of poisons there. Third, conditions which diminish the child's resistance.

Let me present the following summary of the etiological factors of summer complaint:

- I. Means favoring the contamination of food by microörganisms, and their growth therein.
  - 1. [illegible] ndings.
  - 2. [illegible] temperture.
  - 3. Infection.
- II. Means favoring the introduction of microörganisms into the intestinal canal, and the formation of poisons there.
  - 1. Artificial feeding (in whole or in part).
  - 2. Weaning.
  - 3. Overfeeding.
  - 4. Preponderance of proteid food.
- III. Conditions diminishing the child's resistance.
  - 1. Age.
    - *a*. Natural delicacy.
    - *b*. Preponderance of absorptive tissue.
  - 2. Atmospheric heat.
  - 3. Preliminary dyspepsia.
  - 4. Constitutional Conditions.
    - *a*. Premature birth.
    - *b*. Hereditary diseases.
    - *c*. Rickets.
    - *d*. Scurvy.
    - *e*. Other debilitating influences.

Very important information has been furnished by bacteriological investigations in this disease.

Booker, of Baltimore, and Jeffries, of Boston, have taken from the stools of babies suffering with various forms of cholera infantum and summer complaint, specimens, under the most careful and rigid conditions. They introduced double sterilized tubes into the bowel of the child and obtained some of the contents as they came out of the bowel, and investigated these specimens carefully as to the microörganisms they contained. The results obtained by these gentlemen are absolutely classical, and it is gratifying to know that Americans have done this exceedingly laborious work. They tried to find out what they could about microörganisms in the stools of children suffering from summer complaint, and what did they find? Millions and millions of microörganisms. The very fact that we have a foul stool shows that we have a fermenting mass in which microörganisms are growing. From the stools of thirty infants suffering from various forms of diarrhœa, Booker separated forty varieties of bacteria. This by no means represents the whole number of varieties present, as the methods of bacteriological examination in use at present do not permit so complete an examination. The greatest number of varieties found in any given case was eight, but no one kind of organism was found in all the cases. Bacteria of the proteus group seemed to predominate in the severer cases.

Three of the varieties separated by Booker were investigated chemically by Vaughan, of Ann Arbor. Vaughan grew these separately in cultures in beef broth, and passed them through Pasteur filters, thus separating the germs from their chemical products. From each of the sterile cultures he separated a proteid poison. Each of these poisons, when injected under the skin of kittens or dogs, produced vomiting and diarrhœa, and when administered in sufficient quantity, collapse and death followed. In other words, he obtained poisons which were capable of producing the advanced signs of summer complaint as we meet them in the baby. Each poison was a proteid, and each different from the others; he found that none of the three were alike, he could recognize a chemical difference. So there are at least three poisons we know of that will produce summer complaint and they are no doubt the same poisons that are in the intestinal canal, the same poisons that produce the stools. We have three, but we need not stop at three, we may assume that there are many kinds of microörganisms, and that there are many different kinds of poisons which are capable of producing this disease.

Now if that is the condition of the bowel in a child suffering with summer complaint what is the condition of the bowel in a child that is perfectly healthy, in the breast fed baby having normal stools? In the first place, when a child is born, its bowels contain meconium, which is sterile, but within seven hours microörganisms have gained entrance to the meconium through the anus and the mouth; within seven hours after the baby is born. whether it has taken a drop of anything or not there are microbes throughout the intestinal tract. Within a few hours the meconium that the baby passes is found to contain an exceedingly large number of microbes, and they are not only numerous but they exist in great variety. When the child begins to feed at the breast, we find the character of the stools changed and the ordinary yellow stool of the breast fed baby takes the place of the dark brownish green meconium originally present. With this change in the stools, a great change in the variety of microörganisms discharged from the intestinal canal also occurs. The microörganisms formed in the meconium disappear and in their place we have two, the bacterium coli commune, and the bacterium lactis aërogenes, which make up the great bulk of the bacteria present. There are also some accidental microorganisms, but the two named are constantly present, and are characteristic of the milk stools of the healthy infant. That is an exceedingly important fact. It shows that healthy milk stools are capable of supporting only a small variety of microörganisms, and even though the bowel contents were contaminated by a wide variety of microörganisms before the milk of the mother's breast was put into the child's bowel, as soon as the milk does reach there, just so soon do these microörganisms die out. They die because the food they need to maintain life is gone; they die because the food going into the canal is not capable of sustaining them. And this supplies us with the keynote to the handling of the bowel complaints of children by dietetic measures. If you have in the intestinal canal a mass of microörganisms that are living upon a certain kind of food and producing poisons which are making diarrhœa or depression, and you take that food away from them, you will kill the microörganisms by a process of starvation; you can't get them out in any other way, and that the starvation plan is possible, is shown by the change which normally occurs in the bacteria present in the intestinal canal of every healthy baby when the milk stools appear. Practically I know it is possible also in intestinal diarrhœal troubles. So far as microörganisms go we know they are producing some result; what do we find pathological in these cases? I shall have a word to say upon the morbid anatomy of summer complaint, and only a word, as I do not regard this factor as of the highest importance. The best exposition of the morbid anatomy is that of L. Emmett Holt of New York. He investigated a large number of cases anatomically and microscopically and found that if a child had summer complaint for a day or two and died as a result of severe cholera infantum there was not found at the autopsy any serious lesion of the bowels; there might be a little desquamation of the epithelium but nothing more marked. If, however, the child died after a week's duration of the disease more marked lesions were found. By this time the lymphoid tissue of the solitary follicles was involved. These little absorbing masses of lymphoid tissue were thickened. With a greater duration of the disease, the swelling of the follicles resulted in more or less destruction of these bodies, with ulceration. Ulceration was not found prior to the second week of the disease, and extensive ulceration, involving other structures of the bowel, can only be considered well established when the disease has lasted three weeks or more. The most marked lesions were found in the colon. To my mind, this involvement of the lymphoid tissue, and the progress of the lesions coincidently with the duration of the disease, is most significant.

Why does the lymphoid tissue swell? Wherever we find lymphoid tissue we find it swelling when poison comes in contact with it; if poison comes in contact with the tonsils they will swell; if poison passes through a so-called lymphatic gland, it swells; and so it is in the intestines. Poisons are formed there from the mass of putrefying contents and when these poisons pass through the lymphoid tissue, they cause it to swell and finally, from the interference with its nutrition thus produced, to break down and form ulcers. The poisons which have passed through this tissue are evidently the same that have caused the diarrhœa; the same that have produced the other symptoms in the case. Therefore I say that the anatomical conditions present in cases of this kind are but the results of the poisons produced in the intestinal contents and in no sense the cause of the disease. Strümpell, in discussing tuberculosis of the bowel, says that in the diarrhœa of tuberculosis we do not always find on post-mortem that tuberculous disease of the bowel itself exists, and furthermore, when advanced tuberculous disease of the bowel does exist and is shown post-mortem, we have not always had clinically the symptom diarrhœa. In other words, these anatomical lesions have nothing whatever to do with the production of the diarrhœa; they are part and parcel of the symptoms which are produced by the same poisons elaborated in the bowel contents. Chronic diarrhœa is produced when a simple diarrhœa has lasted about three weeks. After three weeks ulcers form on the intestinal walls and microörganisms thrive on the surface of these ulcers which secrete and pour out a certain amount of albuminous material, and this blood serum, or whatever comes out, forms a medium in which microörganisms can grow and manufacture their peculiar poisons; so that if ulcers are present, the microörganisms find a food on the surface of these ulcers aside from the food they had in the intestinal contents, and therefore, by simply modifying the intestinal contents we do not reach the whole cause of diarrhœa. So I would say that a chronic diarrhœa following summer complaint or cholera morbus is maintained by poisons developed on the mucous membranes of the intestines.

With these views of the pathology of the disease, it is easy to understand the wide range of symptoms presented by it, as well as the great variations as to severity which it presents. It becomes unnecessary to speak of the desquamative, catarrhal, or mucous forms of the disease, or to attempt to recognize the follicular form. The severer types so often called "true cholera infantum," do not need to be put into a special category. Theoretically at least, there is no limit to the variety of poisons which may be produced in the bowel contents, and no limit to the symptoms which may be thus invoked. Very frequently indeed do we find putrefaction of retained feces, with the production of various symptoms through the medium of the nervous system, and sometimes it seems that these very poisons produce constipation and favor the retention in the bowels of the putrefying masses in which they have their origin. For this reason it has seemed to me desirable to include putrefactive constipation under the generic term "summer complaint." No doubt a better name than summer complaint could be devised, but it is the least objectionable designation of the summer diarrhœas, and the close relationship, both in pathology and treatment, between summer diarrhœas, and putrefactive constipation, make the extension of the term at least allowable.

SOCIETY PROCEEDINGS.

Allegheny County Medical Society.

Scientific Meeting, March 22, 1892.

J. C. LANGE, M.D., PRESIDENT, IN THE CHAIR.

Dr. F. H. Edsall read the paper announced for the evening, entitled:

REFLEX HEADACHE.

Mr. President and Gentlemen: In presenting for your consideration this evening the subject of reflex headache, I feel almost as though an apology were necessary for occupying your time with a subject apparently so time-worn and threadbare, yet so pregnant with interest for the general practitioner, as well as for the ophthalmologist, is the subject that I feel confident you will grant me your indulgence for having selected it as my paper this evening.

I am sure that if the physician in general practice could but go over the cases he is called upon to treat, he would find that his aid is more often sought for the relief of headache than for any one ill to which flesh is heir, and I am equally sure he will as often be "put to his trumps" in finding a means of accomplishing this relief as in any disorder of the human economy other than the one under consideration. This arises from an easily understood cause. Headache is such a commonly occurring symptom of many deep-seated and obscure affections that be he ever so skilful a diagnostician the physician is many a time and oft compelled to grope blindly in search of the cause, and in consequence his thrusts at the peace-destroying demon of headache must now and again be wildly delivered. Remedies there are without number for headache; the doctor, and the druggist as well, is never at a loss for a drug or prescription to relieve the throbs of pain which rack the sufferer's brain but he who makes drugs his staff upon which to lean will find too often that he has but a broken reed for his support. It is not, I think, a rash statement, nor one not warranted by statistics, that the majority of recurring, or of persistent headaches, are reflex in character, due to some abnormality in the refractive state of the patient's eyes, or to an imperfectly maintained muscular balance between the sets of little muscles which regulate the motions of the eyes—the much talked about heterophorias of the present day, the muscular insufficiencies of the past, and this being the case, the most that can be hoped for from medical treatment is a temporary obtunding of the pain for which the sufferer seeks relief. The busy practitioner of general medicine is unable to spare the time to go into a prolonged examination of the refractive state of the patient's eyes; in fact it may not occur to him to do so, or he may not have the means at hand to accomplish it were he able to spare the time. Naturally, therefore, his mind turns to the pharmacopœia for something with which to relieve his patient, and he has recourse to one or the other of the prescriptions he has found useful in similar cases. This may, if the case be not of reflex origin, end the matter, but if it be due to eye strain, it will prove of temporary benefit at best, and the patient returns so often to the doctor that the case becomes a bugbear, and at last, discouraged and despairing of being able to further aid him, the physician bethinks himself of his friend, the oculist, and to him the patient is forthwith dispatched. If it be eyestrain that has caused the suffering it is soon determined and quickly relieved.

Now, as to the character of headache due to eye strain. What is there in the structure of the eyes that should cause them to give so much offense in so many of our fellowmen? And why is it that drugs have no power to relieve the aching brain where the eyes are at fault, or at best give but temporary relief? In answering the question may I beg your indulgence in advance if I trespass so far upon your good nature as to cite some points in the anatomy of the eye, which it is necessary for you to bear in mind in order to appreciate the causative action of the eyes in producing headache?

The eye proper, as you know, is a spheroidal body, which may be compared to a miniature photographic camera, the retina representing the sensitive plate. The distance between the sensitive plate and the dioptric apparatus of the eye is a fixed distance; that is to say, the distance between the retina and the back of the crystalline lens is so related that when the eye is at rest and normal in structure, the focal point for light coming from a distant object will be exactly upon the surface of this sensitive plate, known as the retina. Suppose now, however, that this relationship is destroyed through the retina being situated in advance of the point where it should be; that is to say, through the antero-posterior diameter of the eye being shorter than normal, as not infrequently happens. The refractive power, the ability of the optical system to focus the light, is an invariable power, thus then we have a condition in which the optical system is called upon to focus the image of the object observed upon a sensitive plate in advance of the point at which the system is adjusted to focus it. One or two things must then happen, either we must get but a blurred and indistinct image of what we look at or else the focusing power of the eye must be increased. The eyes have an inborn abhorrence for blurred images, and in a case like the one cited, unknown to their possessor, set about remedying the indistinctness of outline. By means of the mechanism with which the eyes are provided to enable them to see objects close at hand, the mechanism of accommodation, the refractive power of the lens of the eye can be increased by making it more convex. Now, in an abnormal eye, such as I have mentioned, this mechanism is brought into play. The need is for a stronger lens to make up for the diminished distance between lens and retina, and it is thus met. In doing this, however, the eyes part with a portion of their power of accommodation. It would be a work of supererogation for me to describe minutely the mechanism by which this ability to alter the focal adjustment of the eye is accomplished. I will merely recall to you what you already know, that the ciliary muscle, by contracting or relaxing, increases or diminishes the convexity of the lens which is attached to it, thereby shortening or lengthening its focal distance. In normal eyes this mechanism is only called upon to enable the individual to see objects close at hand. In eyes that are too short this demand is constant and great in proportion to the amount of shortening. Now, in eyes of this character the eyes are constantly doing, as I have said, a certain amount of the work that normal eyes are only called upon to do at intervals, and if we have super-added upon this, the work necessitated in accommodation, there comes a time when the tired muscle begins to send out plainly-felt reminders of this overtaxed state. So nicely are the eyes adjusted to their work that for a long time they can accommodate for close work and make no complaint, if light and other conditions be favorable, but if the amount of work be exceeded for any considerable time, as in the case where in addition to the work of accommodating for near objects, they must cover up the blurring which would be caused by the shortening of the globe it will not be long before the demand for aid will be felt. It is not so much the continuous work which the eyes are called upon to do which makes the need for assistance felt; that is to say, it is not the work of compensation for the defect in structure, unless this be high in degree, for this would doubtless be unnoticed were it not for the additional demands which civilization makes upon the eyes in the way of close work that gives the fillip which causes the eyes to break down, because the ciliary muscle is doing more work than it is capable of doing for any length of time.

In the normal eye there is rest from work when the eyes are fixed upon some distant object, for then the light falls upon the retina focused by the lens at its least convexity. In the shortened eye there is no rest except during sleep, for if the eye is to see clearly at any time the surface of the lens must be to a certain degree more convex than when the eye is normal, which means a demand upon the ciliary muscle. With the intimate nervous connection between the eye and the general nervous system it is not difficult to understand that the constant irritability thus necessitated should communicate itself to the more distant parts and produce the continuous pain which is noticeable in such cases. I have thus far mentioned only hypermetropia as a condition inducing reflex headache from eye strain. As a matter of fact, any of the refractive errors are equally capable of producing this condition, and astigmatism more often even than simple hypermetropia is the cause of cephalalgia. This condition is one in which the cornea, instead of being regularly curved throughout its entire extent, is in one meridian in consequence of congenital defect, of disease, injury or from operation become differently curved from the other.

Thus, to roughly illustrate, it is as though a ridge traversed it from one side to the other. In consequence of this there is never any distinct retinal image so long as the defect remains uncorrected, for there being different focal distances for the light coming through the different meridians of the cornea, there is no possibility of focusing both sets upon the same point. The effect of this is to keep the accommodative apparatus in a continuous struggle to bring both sets of rays to a focus, and from the constant struggle weariness soon ensues—sooner, indeed, than in single hypermetropia, and the headaches follow. This condition may be of a variety of characters. There may be an hypermetropia in only one meridian, or there may be an all round hypermetropia with one meridian more hypermetropic than the other, or the eye may be near-sighted, myopic; in the corresponding way, or lastly, one meridian may be near-sighted, the other far-sighted. Myopia or near-sight may also cause headache, not through its action on the ciliary muscle, for in myopia there is less than the usual demand upon this in using the eyes. The eye is longer than it should be and the lens needs less convexity than it normally would. It is probable that the headache and other symptoms traceable to myopia are dependent upon the disturbance in the relationship which exists between convergance and accommodation. To look at an object close by the eyes have to converge in order to bring the image upon the yellow spot. Ordinarily, this is associated with a considerable degree of accommodative action on the part of the ciliary muscle, however, in a myope less use of the accommodation is necessary than normally to see objects close at hand, while there is still need for the same amount of convergance. It is this condition of disturbance which is doubtless responsible for the headaches due to myopia. Still another abnormal condition of affairs in the eyes may cause reflex headache; this was formerly known as muscular insufficiency. It is a lack of balance between the external and internal recti muscles. In converging to look at objects close at hand, there is a good deal of effort put forth by the internal recti muscles. If, as often happens, the internal recti muscles chance to be weaker than normal, the extra effort required to overcome the antagonistic pair of muscles soon causes fatigue, which very quickly produces nervous disturbance.

Having briefly called your attention to the conditions of the eyes which cause headache, I beg leave to consider the signs by which we should be led to suspect the existence of eye defect.

If the patient complains of increased headache whenever his eyes are used for reading, or if the headache only appears after such use of the eyes; and if the headaches are localized about the temporal or frontal regions, the eyes should be looked to for an explanation, particularly if vision is faulty. So, too, if eyes become reddened easily, or the patient shows a disposition to grow sleepy over his reading, be his book ever so interesting. Careful examination of the eyes with proper appliances will generally clear up the diagnosis.

As to treatment, there are but a few words necessary. Correction of the refractive error by proper glasses will usually give marked and quick relief. This correction should be done under a mydriatic, as without this, much of the defect will doubtless be over-looked. Protean nervous symptoms will ofttimes disappear like magic after proper glasses are adjusted, and the sufferer experience a relief before unknown.

If muscular inefficiency exist, this should be corrected by prisms, or by operation, and some attention to the general health is also demanded, as not rarely this is also at fault, and plenty of open air exercise is to be commended. I regret that the short time that has been given me in which to prepare this paper has prevented my making it more thorough and more interesting, but if I have succeeded in pointing out to you the road to relief for any sufferer who may be in your charge, and for whom medicine offers little hope of relief, I shall feel that it has amply repaid me for the work of writing it.

Dr. Davis: Taking the subject of reflex headache as a whole, the paper touched on but a very slight cause of reflex headaches, compared to the many other reflex headaches. Indeed, I am not certain if you eliminate neuralgia and organic troubles, such as tumors and the like that produce pain in the head, if there is any headache that is not reflex. We know the stomach when disordered will produce headache, and many different organs in the body will produce headache; possibly many of the headaches we cannot trace to the exact organs which are affected are reflex. No doubt, the eye in its impaired refraction causes many headaches. On the other hand there are many defects of the eye, even those mentioned in the paper to-night, which will not cause headache, if the general system is in perfect order. I recall very distinctly a case that came under my observation. A patient of mine suffered very considerably with headache. I believed the liver was the source of these headaches along with the fact that she resided in a malarial country. The patient visited a neighboring city, was taken with the headache, was sent to an oculist, who found what is present in almost every eye, a slight degree of astigmatism; indeed, it is an exception for an eye not to be astigmatic, but this in the course of nature, in a healthy body, can be accommodated, so that it really produces no trouble until the system is out of order in some other way; hence in the case I speak of, they went to an oculist who found there was some astigmatism, put on a glass which thoroughly overcame this, but the headaches persisted. The patient returned and came under my care, and was put under treatment to relieve the liver and bad digestion, and she never put the glasses on again until another attack of the liver would occur. There was marked astigmatism, but it would not cause the headache. The natural mechanism was perfectly able to overcome it until the system was out of order in other ways. And so it is in many of the forms of refractions of the eye, not only when the general health is impaired, but as you advance in age, as you grow older and cannot overcome it, it will give rise to difficulties which you never knew you had. If we would just simply stop at the thought of reflex headaches and stop at the eye, I claim we would stop at a very small proportion of the headaches that are caused from reflexed action, and many of the so-called headaches from eyestrain are also caused by a disordered system, that if corrected, the eye strain itself would not amount to as much as sometimes we are wont to find in that respect. I would call attention to the fact that it has also been my misfortune to meet with a number of reflex headaches that were caused by the glasses the patients wore, sometimes a perfectly fitted glass. In a very short time the patient, getting rid of whatever trouble existed, finds that the glasses which were fitted at first are entirely too strong, with the old accustomed power of accommodation, and really finds these glasses producing headaches. In quite a number of cases I have had patients remove glasses which at one time fitted them very nicely, and after being removed their headaches were benefited. Of course, this is not to be blamed on the oculist, but certainly there is a necessity for the patient going frequently to see that the glasses are perfectly adjusted, and not depend on the fact that he went once and had them fitted.

Dr. Grube: I am one of those who believe the oculist finds defects in a great many eyes, and I am also one of those who believe the defects are there. It is but a part of our life that we have defective eyes. The defects are there, and are to be met and recognized, and these defects cause headaches in a great many more cases than we have any idea. We sometimes fail to remember that we are only a link of a long chain of man's history and forget that the man's eye like the eye of the lower animals, is built for long range. Man used his eye for long range many years, and it is only in the last few generations, since the introduction of printing, that man has taken short range for his eyes. We find our eyes are not built for that purpose. A child is sent to school, and if hypermetropia is not there already it is soon developed by the close work, and I think an investigation would show a large percentage of these eye defects to be in school children, showing the necessity of their being corrected, and I would never undertake to treat a case of chronic headache until I had that element eliminated, until I had the patient examined by an oculist and that part corrected. We have other reflex headaches besides these. We have others which are not reflex, and when the physician has fitted glasses on the patient and dismisses him he has not done his whole duty. One other great element of these headaches, while it is not exactly reflex, is generally blamable on our civilized life, and that is the defective elimination of the uric acid. The great amount of meat diet, of [illegible] must be eliminated from our system, and [illegible] fail to eliminate this we have the troublesome headaches, which are so very persistent, and which will persist as long as we have the nitrogenized food there.

Dr. Allyn: In regard to the correction of the eye for the relief of headaches, we all recognize, of course, that we have a high degree of hypermetropia, or astigmatism. When a person gets to be 20 or 25 years of age, daily accommodations make glasses necessary. Many times that degree of hypermetropia, or astigmatism, may be in the eyes of a patient without producing the headache of which we are speaking to-night. There is another fault in which our work is employed. It is in the correction of low errors in the hypermetropia, especially such errors as the optician ordinarily overlooks. If you will notice a paper published in the journals recently you will see that there is an array of cases of headaches where there is the slightest degree of astigmatism. There is one point I might add, that even if the glasses are found unnecessary after the health has been restored, there is yet a field for their employment. If a person has a headache without the glasses every week, but with the glasses, once in two or three weeks, their use is valuable as far as any other remedy. A glass that may not fit perfectly, may not restore perfectly, but oftentimes has its use as a remedy.

Dr. Edsall: In reply to Dr. Davis' first point, I beg to state that I had originally intended to make the paper wider than it proved to be, but I found it getting beyond me in point of time which I had to complete it, and although I had hoped to touch on the other headaches, which I am perfectly well aware exist, I found it would be impossible for me to do so and make the paper at all worth reading. I had good authority for stating that there are but few causes of headaches in children at least. The authority to which I refer is Dr. Seguin's article in Keating's Encyclopedia of Diseases of Children.

In that, if my memory serves me right, he states specifically there are but two causes of headaches in children, one is eye strain and the other presbyopia. As to Dr. Davis' point in regard to the universality of astigmatism, this is well taken, and I will state that but few cases are on record in which the eyes were not to a degree at least astigmatic. The degree of astigmatism which causes trouble varies very much in different patients. In one case it will cause a great deal of trouble, while in another patient it will be overlooked for a long time. I have been surprised to find the amount of astigmatism in existence, and work comparatively comfortably carried on. I have a case under my care at the present time, and the patient for years has been able to carry on all the duties of life, and has suffered comparatively little until the age when the hardening of the lens made the astigmatism uncomfortably apparent. Presbyopia always brings out defects of this character, and hypermetropia as well, and if the defect is not felt early in life, it will be felt after presbyopia intervenes.

As to glasses causing headaches, here again I will agree with Dr. Davis. These glasses prescribed under mydriatics, in all existing defects of the eye do, for a time, almost invariably, when first put on cause discomfort to the patient. There are also some patients who are able to adapt themselves with little or no trouble, but if the glasses are not put on until after this effect has disappeared, the difficulty of accommodating them is felt much more severely than it would be otherwise, and this difficulty is sometimes so very apparent as to cause headache in itself; but if the patient persists he will find that this factor in causing headaches will shortly disappear. Dr. Allyn brought up some very interesting points. The low grades of astigmatism sometimes cause more suffering than higher degrees do, largely, because, as Dr. Allyn says, they are overlooked. Higher degrees produce so much discomfort that resource is soon had to the ophthalmologist for relief, but the low grades, unless careful examination is made, are overlooked time and time again, and the patient suffers without relief until by chance he falls into the hands of some one who recognizes it, and the defect is corrected. Dr. Chisholm, of Baltimore, before the American Medical Association, said that all cases of astigmatism should be corrected. In some cases in my experience, astigmatism will cause no discomfort for at least some time, but in other cases it causes considerable discomfort. It is no quick or easy matter to correct these defects, even when time and patience are both unlimited. I am well aware that eye strain is not the only cause of reflex headaches, but I still stand by the assertion that it is the most common cause.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopædic Surgery.

Stated Meeting, March 18, 1892.

HENRY LING TAYLOR, M.D., CHAIRMAN.

ASYMMETRY OF THE EXTREMITIES.

Dr. L. W. Hubbard presented two sisters exhibiting this condition. One child had 1½ inch shortening of the left lower extremity, and about 2½ inches shortening in the left upper extremity, which was about evenly divided between the arm, forearm and hand. There was also slight shortening of the left ramus of the jaw. Her younger sister also exhibited about the same amount of shortening of the left upper and lower extremities. The muscles were developed in both cases. Their parents were healthy Germans, and there was no history of a similar deformity in other members of the family. An attempt had been made to explain this asymmetry on the theory that there is an unequal development of the cerebrum on the two sides.

Dr. A. B. Judson had seen a counterpart of these cases in a girl of 11 years, in whom the right ear and eye, as well as the right upper and lower limbs, were congenitally smaller than the left. He suggested wearing an ischiatic crutch on the larger side, and a high sole on the smaller side, during the periods of rapid growth. He thought that hip cases treated in this way owed the disparity in length of the limbs, which is found in the tibia, as well as in the femur, partly to the disease of one, and the over-use of the other. Advantage should be taken of this fact in the treatment of these cases of congenital asymmetry.

Dr. R. H. Sayre said that many writers had denied that want of symmetry in the lower extremities is a cause of true lateral curvature, and held that the occasional association of the two conditions is a mere coincidence. Personally, however, he believed that if the children just presented were allowed to go on to puberty without the employment of measures to equalize the limbs, they would certainly develop true lateral curvature. In one of the cases just presented, the lack of development did not seem to him to be entirely confined to one-half of the body, as the left side of the face appeared larger than the right, although the extremities were smaller on the left side than on the right. On this account, he did not think the theory that this asymmetry was due to unequal development of the two halves of the cerebrum, could be correct.

He agreed with the previous speaker that much of the atrophy following hip disease was due to lack of use, and he therefore heartily endorsed his suggestions as to treatment.

Dr. A. M. Phelps said that his experience had led him to believe that the shortening of the limb in hip disease is never due to anything but bone destruction, and that the employment of the treatment suggested would effect no change in the length of the limbs, although it might increase their circumference.

this condition, and astigmatism more often even than simple hypermetropia is the cause of cephalalgia. This condition is one in which the cornea, instead of being regularly curved throughout its entire extent, is in one meridian in consequence of congenital defect, of disease, injury or from operation become differently curved from the other.

Thus, to roughly illustrate, it is as though a ridge traversed it from one side to the other. In consequence of this there is never any distinct retinal image so long as the defect remains uncorrected, for there being different focal distances for the light coming through the different meridians of the cornea, there is no possibility of focusing both sets upon the same point. The effect of this is to keep the accommodative apparatus in a continuous struggle to bring both sets of rays to a focus, and from the constant struggle weariness soon ensues—sooner, indeed, than in single hypermetropia, and the headaches follow. This condition may be of a variety of characters. There may be an hypermetropia in only one meridian, or there may be an all round hypermetropia with one meridian more hypermetropic than the other, or the eye may be near-sighted, myopic; in the corresponding way, or lastly, one meridian may be near-sighted, the other far-sighted. Myopia or near-sight may also cause headache, not through its action on the ciliary muscle, for in myopia there is less than the usual demand upon this in using the eyes. The eye is longer than it should be and the lens needs less convexity than it normally would. It is probable that the headache and other symptoms traceable to myopia are dependent upon the disturbance in the relationship which exists between convergance and accommodation. To look at an object close by the eyes have to converge in order to bring the image upon the yellow spot. Ordinarily, this is associated with a considerable degree of accommodative action on the part of the ciliary muscle, however, in a myope less use of the accommodation is necessary than normally to see objects close at hand, while there is still need for the same amount of convergance. It is this condition of disturbance which is doubtless responsible for the headaches due to myopia. Still another abnormal condition of affairs in the eyes may cause reflex headache; this was formerly known as muscular insufficiency. It is a lack of balance between the external and internal recti muscles. In converging to look at objects close at hand, there is a good deal of effort put forth by the internal recti muscles. If, as often happens, the internal recti muscles chance to be weaker than normal, the extra effort required to overcome the antagonistic pair of muscles soon causes fatigue, which very quickly produces nervous disturbance.

Having briefly called your attention to the conditions of the eyes which cause headache, I beg leave to consider the signs by which we should be led to suspect the existence of eye defect.

If the patient complains of increased headache whenever his eyes are used for reading, or if the headache only appears after such use of the eyes; and if the headaches are localized about the temporal or frontal regions, the eyes should be looked to for an explanation, particularly if vision is faulty. So, too, if eyes become reddened easily, or the patient shows a disposition to grow sleepy over his reading, be his book ever so interesting. Careful examination of the eyes with proper appliances will generally clear up the diagnosis.

As to treatment, there are but a few words necessary. Correction of the refractive error by proper glasses will usually give marked and quick relief. This correction should be done under a mydriatic, as without this, much of the defect will doubtless be over-looked. Protean nervous symptoms will ofttimes disappear like magic after proper glasses are adjusted, and the sufferer experience a relief before unknown.

If muscular inefficiency exist, this should be corrected by prisms, or by operation, and some attention to the general health is also demanded, as not rarely this is also at fault, and plenty of open air exercise is to be commended. I regret that the short time that has been given me in which to prepare this paper has prevented my making it more thorough and more interesting, but if I have succeeded in pointing out to you the road to relief for any sufferer who may be in your charge, and for whom medicine offers little hope of relief, I shall feel that it has amply repaid me for the work of writing it.

Dr. Davis: Taking the subject of reflex headache as a whole, the paper touched on but a very slight cause of reflex headaches, compared to the many other reflex headaches. Indeed, I am not certain if you eliminate neuralgia and organic troubles, such as tumors and the like that produce pain in the head, if there is any headache that is not reflex. We know the stomach when disordered will produce headache, and many different organs in the body will produce headache; possibly many of the headaches we cannot trace to the exact organs which are affected are reflex. No doubt, the eye in its impaired refraction causes many headaches. On the other hand there are many defects of the eye, even those mentioned in the paper to-night, which will not cause headache, if the general system is in perfect order. I recall very distinctly a case that came under my observation. A patient of mine suffered very considerably with headache. I believed the liver was the source of these headaches along with the fact that she resided in a malarial country. The patient visited a neighboring city, was taken with the headache, was sent to an oculist, who found what is present in almost every eye, a slight degree of astigmatism; indeed, it is an exception for an eye not to be astigmatic, but this in the course of nature, in a healthy body, can be accommodated, so that it really produces no trouble until the system is out of order in some other way; hence in the case I speak of, they went to an oculist who found there was some astigmatism, put on a glass which thoroughly overcame this, but the headaches persisted. The patient returned and came under my care, and was put under treatment to relieve the liver and bad digestion, and she never put the glasses on again until another attack of the liver would occur. There was marked astigmatism, but it would not cause the headache. The natural mechanism was perfectly able to overcome it until the system was out of order in other ways. And so it is in many of the forms of refractions of the eye, not only when the general health is impaired, but as you advance in age, as you grow older and cannot overcome it, it will give rise to difficulties which you never knew you had. If we would just simply stop at the thought of reflex headaches and stop at the eye, I claim we would stop at a very small proportion of the headaches that are caused from reflexed action, and many of the so-called headaches from eyestrain are also caused by a disordered system, that if corrected, the eye strain itself would not amount to as much as sometimes we are wont to find in that respect. I would call attention to the fact that it has also been my misfortune to meet with a number of reflex headaches that were caused by the glasses the patients wore, sometimes a perfectly fitted glass. In a very short time the patient, getting rid of whatever trouble existed, finds that the glasses which were fitted at first are entirely too strong, with the old accustomed power of accommodation, and really finds these glasses producing headaches. In quite a number of cases I have had patients remove glasses which at one time fitted them very nicely, and after being removed their headaches were benefited. Of course, this is not to be blamed on the oculist, but certainly there is a necessity for the patient going frequently to see that the glasses are perfectly adjusted, and not depend on the fact that he went once and had them fitted.

Dr. Grube: I am one of those who believe the oculist finds defects in a great many eyes, and I am also one of those who believe the defects are there. It is but a part of our life that we have defective eyes. The defects are there, and are to be met and recognized, and these defects cause headaches in a great many more cases than we have any idea. We sometimes fail to remember that we are only a link of a long chain of man's history and forget that the man's eye like the eye of the lower animals, is built for long range. Man used his eye for long range many years, and it is only in the last few generations, since the introduction of printing, that man has taken short range for his eyes. We find our eyes are not built for that purpose. A child is sent to school, and if hypermetropia is not there already it is soon developed by the close work, and I think an investigation would show a large percentage of these eye defects to be in school children, showing the necessity of their being corrected, and I would never undertake to treat a case of chronic headache until I had that element eliminated, until I had the patient examined by an oculist and that part corrected. We have other reflex headaches besides these. We have others which are not reflex, and when the physician has fitted glasses on the patient and dismisses him he has not done his whole duty. One other great element of these headaches, while it is not exactly reflex, is generally blamable on our civilized life, and that is the defective elimination of the uric acid. The great amount of meat diet, of nitrogenous food, must be eliminated from our system, and when the kidneys fail to eliminate this we have the troublesome headaches, which are so very persistent, and which will persist as long as we have the nitrogenized food there.

Dr. Allyn: In regard to the correction of the eye for the relief of headaches, we all recognize, of course, that we have a high degree of hypermetropia, or astigmatism. When a person gets to be 20 or 25 years of age, daily accommodations make glasses necessary. Many times that degree of hypermetropia, or astigmatism, may be in the eyes of a patient without producing the headache of which we are speaking to-night. There is another fault in which our work is employed. It is in the correction of low errors in the hypermetropia, especially such errors as the optician ordinarily overlooks. If you will notice a paper published in the journals recently you will see that there is an array of cases of headaches where there is the slightest degree of astigmatism. There is one point I might add, that even if the glasses are found unnecessary after the health has been restored, there is yet a field for their employment. If a person has a headache without the glasses every week, but with the glasses, once in two or three weeks, their use is valuable as far as any other remedy. A glass that may not fit perfectly, may not restore perfectly, but oftentimes has its use as a remedy.

Dr. Edsall: In reply to Dr. Davis' first point, I beg to state that I had originally intended to make the paper wider than it proved to be, but I found it getting beyond me in point of time which I had to complete it, and although I had hoped to touch on the other headaches, which I am perfectly well aware exist, I found it would be impossible for me to do so and make the paper at all worth reading. I had good authority for stating that there are but few causes of headaches in children at least. The authority to which I refer is Dr. Seguin's article in Keating's Encyclopedia of Diseases of Children.

In that, if my memory serves me right, he states specifically there are but two causes of headaches in children, one is eye strain and the other presbyopia. As to Dr. Davis' point in regard to the universality of astigmatism, this is well taken, and I will state that but few cases are on record in which the eyes were not to a degree at least astigmatic. The degree of astigmatism which causes trouble varies very much in different patients. In one case it will cause a great deal of trouble, while in another patient it will be overlooked for a long time. I have been surprised to find the amount of astigmatism in existence, and work comparatively comfortably carried on. I have a case under my care at the present time, and the patient for years has been able to carry on all the duties of life, and has suffered comparatively little until the age when the hardening of the lens made the astigmatism uncomfortably apparent. Presbyopia always brings out defects of this character, and hypermetropia as well, and if the defect is not felt early in life, it will be felt after presbyopia intervenes.

As to glasses causing headaches, here again I will agree with Dr. Davis. These glasses prescribed under mydriatics, in all existing defects of the eye do, for a time, almost invariably, when first put on cause discomfort to the patient. There are also some patients who are able to adapt themselves with little or no trouble, but if the glasses are not put on until after this effect has disappeared, the difficulty of accommodating them is felt much more severely than it would be otherwise, and this difficulty is sometimes so very apparent as to cause headache in itself; but if the patient persists he will find that this factor in causing headaches will shortly disappear. Dr. Allyn brought up some very interesting points. The low grades of astigmatism sometimes cause more suffering than higher degrees do, largely, because, as Dr. Allyn says, they are overlooked. Higher degrees produce so much discomfort that resource is soon had to the ophthalmologist for relief, but the low grades, unless careful examination is made, are overlooked time and time again, and the patient suffers without relief until by chance he falls into the hands of some one who recognizes it, and the defect is corrected. Dr. Chisholm, of Baltimore, before the American Medical Association, said that all cases of astigmatism should be corrected. In some cases in my experience, astigmatism will cause no discomfort for at least some time, but in other cases it causes considerable discomfort. It is no quick or easy matter to correct these defects, even when time and patience are both unlimited. I am well aware that eye strain is not the only cause of reflex headaches, but I still stand by the assertion that it is the most common cause.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopædic Surgery.

Stated Meeting, March 18, 1892.

Henry Ling Taylor, M.D., Chairman.

ASYMMETRY OF THE EXTREMITIES.

Dr. L. W. Hubbard presented two sisters exhibiting this condition. One child had 1½ inch shortening of the left lower extremity, and about 2½ inches shortening in the left upper extremity, which was about evenly divided between the arm, forearm and hand. There was also slight shortening of the left ramus of the jaw. Her younger sister also exhibited about the same amount of shortening of the left upper and lower extremities. The muscles were developed in both cases. Their parents were healthy Germans, and there was no history of a similar deformity in other members of the family. An attempt had been made to explain this asymmetry on the theory that there is an unequal development of the cerebrum on the two sides.

Dr. A. B. Judson had seen a counterpart of these cases in a girl of 11 years, in whom the right ear and eye, as well as the right upper and lower limbs, were congenitally smaller than the left. He suggested wearing an ischiatic crutch on the larger side, and a high sole on the smaller side, during the periods of rapid growth. He thought that hip cases treated in this way owed the disparity in length of the limbs, which is found in the tibia, as well as in the femur, partly to the disease of one, and the over-use of the other. Advantage should be taken of this fact in the treatment of these cases of congenital asymmetry.

Dr. R. H. Sayre said that many writers had denied that want of symmetry in the lower extremities is a cause of true lateral curvature, and held that the occasional association of the two conditions is a mere coincidence. Personally, however, he believed that if the children just presented were allowed to go on to puberty without the employment of measures to equalize the limbs, they would certainly develop true lateral curvature. In one of the cases just presented, the lack of development did not seem to him to be entirely confined to one-half of the body, as the left side of the face appeared larger than the right, although the extremities were smaller on the left side than on the right. On this account, he did not think the theory that this asymmetry was due to unequal development of the two halves of the cerebrum, could be correct.

He agreed with the previous speaker that much of the atrophy following hip disease was due to lack of use, and he therefore heartily endorsed his suggestions as to treatment.

Dr. A. M. Phelps said that his experience had led him to believe that the shortening of the limb in hip disease is never due to anything but bone destruction, and that the employment of the treatment suggested would effect no change in the length of the limbs, although it might increase their circumference.

Dr. R. H. Sayre said that after cases of club-foot have improved sufficiently to enable them to use their feet, it is noticed that there is not only an increase in the bulk of the feet, but also in the length of the bones. It had also been observed, in colleges where careful records are kept of the physical condition of the students, that those who exercise regularly in the gymnasium not only have larger muscles, but are taller than those who do not avail themselves of this opportunity for physical training.

Dr. Lewis A. Sayre read a paper entitled:

RESULTS IN CASES OF HIP DISEASE TREATED BY THE PORTABLE TRACTION SPLINT, WITHOUT IMMOBILIZATION EXCEPT DURING THE INFLAMMATORY STAGE; WITH ILLUSTRATIVE CASES.

He held that absolute immobilization of the diseased joint during the entire period of treatment, as advocated by a number of writers in the past few years, was not always essential to complete recovery, and he presented detailed histories of seven cases in support of this view. The diagnosis in all these cases had been confirmed by other surgeons of recognized ability, who had seen them in consultation. Photographs of five of these patients were exhibited, which showed absolutely normal mobility of the joint, the photographs being taken with both legs straight, and the patient in the standing position, and also with the foot of the diseased side on top of a chair, and again with the patient sitting with the foot of the diseased side on the knee of the opposite side, and the knee of the diseased side dropped so as to make the leg parallel with the floor. One patient was present who could do all motions equally well with either hip, and another, who was shown as a *good*, but not as a perfect cure, who could put either foot on top of a chair in front of him, and who could cross his legs, but who was unable to put the foot on the diseased side in his lap, as could all the other patients whose histories were reported in full.

Dr. Sayre then gave the following statistics of 407 cases of morbus coxarius, which he had treated between the years 1859 and 1889, exclusive of exsections:

First stage	118
Second stage	119
Third stage	82
Not mentioned	88
Total number of cases	407

RESULTS.

Cured, motion perfect		71
Cured, motion good		142
Cured, motion limited		83
Cured, ankylosed		5
Unknown		78
Under treatment		14
Abandoned		3
Discharged		2
Died of exhaustion	2	
" " phthisis	1	
" " pneumonia	1	
" " tubercular meningitis	5	
Total deaths		9
Total number of cases		407

Cases in which the author knew the result, and also the kind of splint worn between 1859 and 1889, excluding cases under treatment:

Cures with perfect motion.	
Long splint	19, or 21.59 per cent.
Short "	54, or 28.12 per cent.
Cures with good motion.	
Long splint	34, or 38.63 per cent.
Short "	86, or 44.79 per cent.
Cures with limited motion.	
Long splint	29, or 32.95 per cent.
Short "	49, or 25.52 per cent.
Cures with ankylosis.	
Long splint	3, or 3.40 per cent.
Short "	1, or 0.52 per cent.
Deaths.	
Long splint	3, or 1.56 per cent.
Short "	2, or 1.04 per cent.
Treated with long splint	88
Treated with short splint	192
Total	280

The plan of treatment pursued in these cases had been rest in bed, usually with a blister behind the trochanter when the case was seen in the early stages, combined with traction in the line of the deformity with such weight as gave the greatest relief, while the body and sound limb were secured to a long splint passing from the axilla to the foot. In certain cases, lateral traction was also added. This was first used by Dr. Sayre in 1868. When the acuteness of the joint spasm had subsided, and the deformity had been overcome, the line of traction having been gradually changed until the limbs were parallel, the child was allowed to get up with the short splint and crutches in some cases, and in other cases, with the long splint, either with or without crutches, according to circumstances. The author did not enter into the details of application, as these had previously been fully described. Cases involving both joints had been treated in the wire cuirass, as far as possible, in order to allow of driving in the sun and air. The limbs were occasionally removed from the cuirass, one at a time, for the purpose of making slight motion of the joint, inside the degree of causing pain. Traction was considered as one of the requisites of treatment, as the author had seen cases go on to extensive suppuration with entire destruction of the acetabulum, from reflex pressure, in spite of constant fixation by plaster of Paris for two years without traction. He had also seen a case of ankylosis of all the joints of the trunk and lower extremities in a case that was kept constantly in a cuirass for nine months without motion. The ankylosis in this case was not accompanied by any fever or pain, so that the supposition that a rheumatic diathesis was responsible for this condition, was untenable.

Cases of exsection had not been included in the table of statistics, as they had been published separately, and most of them had been in such advanced stages when first seen as to preclude the possibility of mechanical treatment.

Discussion.

Dr. Judson agreed with the writer of the paper that traction does not secure complete immobilization, but rather fixation or a fractional and sufficient degree of immobilization. Fixation thus produced, relieves pain and hastens recovery, but does not prevent the correction of deformity, which is brought about conveniently and surely as soon as the patient, wearing the hip splint or the ischiatic crutch, is taught to observe habitually the natural rhythm of walking. Adduction and flexion are thus reduced because the limb reaches outward and downward in abduction, and extension in order to do its share of the work of progression which is thrown upon it by the footsteps is equalized. He had been pleased to find that not only is deformity reduced, but also the range of motion is increased in the joint when the limb is summoned in this way to do as far it can, its half of the work of locomotion.

Dr. Phelps said that while listening to the paper he had been impressed with the striking difference between the statistics presented by the author and those published a few years ago by Shaffer and Lovett, notwithstanding that all these gentlemen used the same plan of treatment. In thirty-nine cases reported by the two last named gentlemen, nineteen had anchylosis, and seven were in a condition almost equivalent to anchylosis. The author of the paper which had just been presented, deserved to be congratulated on the large number of magnificent cures which he had obtained. The speaker admitted that he had become somewhat prejudiced against the long traction splint, partly as a result of experience, and partly because of the publication of the statistics which he had just quoted. Where anchylosis had occurred he believed it was due to trauma which had been produced by allowing the patient to walk upon the apparatus or on account of a joint in the splint which allowed free motion, or because traction had not been made in the axis of the neck. He considered that the introduction of the long traction splint marked a distinct advance in orthopædic surgery, but he thought still further advance would follow attention to the points just mentioned, and it was on this account that he had adopted the plan of complete immobilization. The long traction splint was born of a fever of anchylosis, and a desire that the patient should have exercise, yet in his own experience, which embraced a large number of dispensary cases of the worst class, anchylosis had not occurred in a single one of the cases which he had treated for the past four years. The members would doubtless recall the cases which he had previously presented, which although completely immobilized for periods of about one year, still had complete motion of the joint. He did not believe that fixation of a joint, either diseased or healthy, resulted in anchylosis. The fact that anchylosis was not a constant result of fixation, proved this theory to be erroneous. The "ossified man," during the early stages of his disease, had been subjected to all sorts of manipulations, yet every joint became anchylosed. He believed the case of anchylosis reported in the paper was due to some affection of the nervous system, and was not the result of the immobilization. Anchylosis is determined by the character of the inflammation, its severity, and duration, the parts involved, and the subsequent cicatricial contraction of the capsule of the joint, and he could not see how passive motion could prevent such destructive changes. The long traction splint, no matter how applied, will allow the foot to be elevated 35° by tilting of the band at the pelvis. He preferred this instrument, however, to the short traction splint. Although he had employed lateral traction at first without knowing that it had been used before, he had since found several references to it in literature, showing that it had been used many years ago by Busch.

While on the subject of the use of the long traction splint, he wished to call to mind the fact that cases of hip joint disease present great differences, and that some which run a favorable course are accompanied by much pain, while others which are associated with extensive destruction of bone, have very little pain. He hoped that every one using the long traction splint would have as fortunate an experience as had the author, but for the present he felt that he must continue to use his lateral traction splint.

Dr. John Ridlon said that in a paper which he had written a few years ago on the subject of fixation and traction, he stated that as he had never met with a patient who had worn the short splint he thought this splint could not be used much in this vicinity. He wished to take this opportunity to say that since writing that paper, he had seen three cases which had previously worn this splint. He had been especially interested in Dr. Sayre's statement that he had secured better results with this instrument than with the long traction splint. Some years ago, he had come to the conclusion that the long traction splint was positively harmful as a walking apparatus, as it seemed to increase "the pumping action" at the joint. That it should do so seemed reasonable, when one recalled the fact that with a traction of from five to ten pounds, and a splint weighing from six to eight pounds, the patient at each step stands upon the splint, lifting the well leg and relaxing all traction. The effect of this upon the joint can be easily imagined, when it is remembered that a child running about, takes two or three thousand steps an hour. That this splint does not exert a harmful influence in this way seems to be still further confirmed by the better results which the author had obtained from the short traction splint. As many of the cases had been treated at different times by both the long and the short splints, it was difficult to say how much of the good result was to be attributed to the one or the other splint. It seemed to him that some cases of hip joint disease seemed to recover no matter what the method of treatment adopted, or even when they were entirely untreated. We had not yet found out what was the essential vital principle in the treatment of each individual case. As an instance of this, he cited the case of a child whom he had treated most carefully for six years, and yet the result was not as good as in the case of a sister of this child who had gone through the entire period of hip disease without any surgical treatment. It was true that some of his cases which should be on crutches, were walking around on the limb, because he was unable to control them, yet he was free to admit that it did not seem to have hurt them.

Dr. Halsted Myers said that the majority of cases of tubercular osteitis of the hip have the primary local focus in the neck of the femur at the junction of the epiphysis and shaft. We can recognize this condition by appropriate tests, and as at this stage, there is no involvement of the cartilages of the joint, it is obviously unnecessary to immobilize the joint; yet it is *most important* that concussion and pressure should be taken from the inflamed and softened bone, and that there should be no possibility of the weight of the body being thrown on that limb. He believed that in a number of cases the disease never extends beyonds this location, and is cured *in situ*. He had no pathological specimens to prove this point, nor has it been investigated as yet; he spoke from a clinical standpoint. In cases where there is erosion of the joint surfaces bearing against each other, he thought motion is injurious, as well as pressure, as is plainly indicated by the presence of reflex muscular spasm, which is a reliable guide. We always find reflex muscular spasm at the point where motion is injurious. On the other hand, immobilization of a disorganized joint *provided pressure is also relieved*, he had never seen to cause any permanent injury to the joint. To show the importance of the relief of pressure in this connection, he stated that in order to relieve pain, he had had to apply traction to a case of hip disease which was wearing a Thomas splint, correctly shaped and applied. Recognizing the importance of this evidence, he had made repeated careful observations, but always with the same result, that traction was in this case necessary for the relief of pain.

Dr. H. W. Berg wished to protest against the feeling of nihilism which might be engendered by Dr. Ridlon's remarks. If we were able to make a purely pathological diagnosis instead of a generic one—"hip disease"—we might be able to point out in advance those cases which would do well, and those which would do ill.

Dr. W. R. Townsend said that while not wishing to detract in the least from the credit due the author for securing such excellent results, he desired to point out the fact that one factor contributing to this end, was undoubtedly the very favorable surroundings of his patients. Again, the author could hardly have selected better cases had he desired to illustrate the traumatic origin of hip disease, and the fact of many of the cases reported having such an origin affords still another reason for the excellence of his results. Bone tuberculosis and an osteitis due to traumatism may give the same clinical symptoms, but they should give different ultimate results.

Dr. Judson said that for a number of years he had kept a description of all hip splints he had applied, and their weight had ranged from one and one-half pounds in the case of a child, to little over five pounds for a large adult.

He thought that some of us were dissatisfied with the hip splint because we expect more than the nature of these cases allows. We cannot cut short hip disease as we can break up chills with quinine. We must put the part and the system in the most favorable position attainable, and then wait for the processes of natural repair. This is best done by making traction, so long as it is needed, and protecting the limb throughout the treatment from the traumatism of walking, while locomotion is freely practiced. Traction and protection are the features of the American method, by which it is distinguished from the Liverpool method of portable leverage, and the London method of recumbent traction. The results obtained by Dr. Sayre are good, but not exceptional. They are within the reach of all who adhere to the plan of treatment which has been outlined.

Dr. R. H. Sayre said that the fact that one man regards a case as tubercular, and another, as non-tubercular, did not change the character of the lesion, nor influence the progress of the disease.

Regarding the question of the occurrence of anchylosis, he said that he believed some cases would become anchylosed whether motion was allowed, or entirely prevented, and as an illustration of this, he recalled a case of double hip joint disease in which the disease on one side was very severe, and was accompanied by extensive suppuration, while on the other side, it ran a much milder course. During the progress of the disease in the latter joint, she was kept in bed or in a wire cuirass, yet notwithstanding this treatment and the apparently mild course of the disease, absolute anchylosis was the result, while in the other joint, good motion was secured. Again, after the disease was apparently arrested in both joints, and both seemed to be equally stiff, passive motion gave a good joint which suppurated but resulted in no benefit on the other side. He had seen a number of cases of disease of both hips and knees, in which the joints seemed to be perfectly fixed until passive motion was instituted. He did not approve of leaving these stiffened joints to be loosened up by the ordinary motions which the patient would make.

Dr. Phelps said he agreed with the other speakers as to the value of forcible breaking up of adhesions under ether, but he could not understand how motion of a joint during inflammation could *prevent* anchylosis. As the inflammatory material which limits the motion during inflammation is absorbed, there will be an increased motion of the joint, and in his opinion, active motion on the part of the patient was better than passive motion. He had frequently produced by passive motion a return of the pain and stiffness in the joint.

Dr. Townsend could not see how anyone could believe that an osteitis due to traumatism represented the same pathological process as one due to tuberculosis, although the clinical symptoms might be identical.

The Chairman said, that while all must admit that the statistics presented in the paper are not only brilliant, but exceedingly valuable, in comparing them with the statistics of those who do not resort to excision of joints, allowance must be made for those joints which had gone on to excision. This would also affect the mortality. One point which was very strongly brought out in the paper, was the positive, decided, and immediate relief of pain obtained in the majority of cases from traction properly applied. In hip joint disease, it is fair to infer, as is also evident from the results obtained, that if the pain is relieved, the treatment is beneficial to the joint. He believed in immobilization in the acute stage, so far as it could be produced by traction, but he did not believe it was necessary to go up to the axilla and immobilize the spinal column. Sometimes traction must be supplemented by recumbency, and sometimes by the use of crutches; these were all the necessary elements for the proper management of those cases which can be successfully treated by mechanical means. His own experience had led him to think that by far the most efficient method of applying traction was by means of the long traction splint.

Dr. Sayre, in closing the discussion, said that the statistics presented were only those which had been fully completed, and they represented forty years of work. He thought Dr. Phelps had misunderstood him about the question of motion at the joint. He had always advocated, repeatedly and persistently, rest of an inflamed joint, but he *permitted* such motion as the patient would himself make. He did not consider that any motion which would not cause pain was injurious. He applied sufficient traction to prevent pressure on the joint, and it was all-important that this traction should be made in the proper direction. He did not approve of an unyielding strap which, in the splint used by Dr. Taylor and Dr. Shaffer, is attached to the pelvic band and the shaft of the splint; in his opinion, it should be made of elastic webbing.

As regards the etiology of his cases, he did not pretend to say whether or not the processes were tubercular or non-tubercular. At the time he began his investigations, everything was called "scrofula," and medical men believed that tubercle was always found in the lungs before it was deposited in other parts of the body. Having learned from autopsies on some cases of hip joint disease that there were no tubercles in the lungs, he began to doubt the tubercular nature of this disease, and he was led to look upon it as a chronic inflammation resulting from a greater or less degree of traumatism. Now that the presence of the tubercle bacilli furnished a definite basis for a diagnosis, he was trying to learn something about the occurrence of tubercle in these cases. Clinical experience had taught him, however, that whether those cases were tubercular or not, fresh air, good food, and freedom from pain were the essentials for a cure.

Referring to the occurrence of anchylosis, he said that one single case of absolute, firm anchylosis of all the joints in the body was worth more to him than any number of experiments on dogs. In the case which he had reported in his paper, there was no fever, no evidence of any nervous derangement, in fact, there was no constitutional disturbance. To apply a splint without traction is wrong; nothing makes better immobilization than plaster of Paris, and it is much more comfortable than the Thomas brace, yet it is insufficient without traction to overcome the reflex muscular contraction, and to relieve pain. The treatment which he advocated, was the best possible one, no matter what the etiology of the disease.

Dr. John Ridlon exhibited a convenient pocket knife with blades especially designed to facilitate the removal of plaster of Paris bandages.

FOR a case of exophthalmic goitre in a man, Prof. Da Costa prescribed tinctura aconiti, gtt. j, every three or four hours, the dose to be increased to gtt. v. His diet should be bland and unstimulating, and he should rest in the recumbent position as much as possible. Prof. Da Costa said that it is very rare to have exophthalmic goitre in a man; while he has seen hundreds of cases in women, he could count on his fingers all the cases he had seen in men.

DOMESTIC CORRESPONDENCE.

The Inebriate Diathesis.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

An incident in the history of the workings of the inebriate diathesis and its origin and treatment, has come to my knowledge, which seems to me both interesting and instructive. To fully appreciate its significance, I will, with your permission, introduce my account, with some prefactory observations bearing upon the principles to be derived from it, and the lessons to be taught by it.

Neuro-pathologists agree that constitutional diseases of the nervous system, are prone to change their forms. Their aspects, symptoms, their physical manifestations, are indeed liable to such radical variations in appearance, that they are known as distinct diseases and bear different names. And these changes in form occur, not through force of heredity alone, but sometimes they take place even in the life and experiences of a single individual. I have witnessed striking instances of this latter fact in several different persons. Blandford, Maudsley, C. H. Hughes and in fact all the best authorities bear testimony in the same direction.

But in contemplating this great truth, the inquiry will instinctively arise in the mind: What are, after all, the true, the *original* sources of the several recognized forms of constitutional nervous disease? If any one of these morbid affections can readily be transmuted into some other, and different one, may it not be true that there was a time when a very limited number of these forms of disease were in existence? Might not the larger portion of the separate and determinate forms of nervous disease, have been produced by the simple laws of the transformation of the neurotic features?

There are persons who profess to doubt whether dipsomania is a neurotic form of disease, interchanging with insanity, epilepsy, chorea, and with latency of the moral faculties. But the best authorities hold that dipsomania is a form of unstable constitution, and convertible into other well known neurotic diseases. What is there then, to controvert the assumption that, in all probability, dipsomania is itself, the oldest and most powerful neurosis in the whole catalogue of nervous affections? What is there unreasonable in the idea that dipsomania, not only is *not* a feeble and doubtful member of the neurotic family, but that alcohol is in fact the chief and most active parent of that family? Alcoholic excess is as old as any written records of the personal habits of mankind. The chief actor in the second start of the human family in the race of life, seized the first possible opportunity to achieve intoxication in his own person, and he went at the business as though it was not new to him. And the practice and spectacle of senseless drunkenness has continued without material abatement until the present time.

Is there anything strange or improbable in the supposition, that alcohol, through the physical degenerations wrought by it upon the human organism, is the most potent agent in the production of the hosts of neurotic diseases, that to-day are scourging the family of man? Here may be seen, possibly, the explanation of a great deal of insanity and crime—of kleptomania and pyromania—as well as of the development of many diseases; as forms of heart disease, neuralgias, asthmas, and an endless variety of analogous affections.

Of course, there are episodes in life, that aid the great central power of alcohol in the production of constitutional neurotic diseases. Yet these are, after all, of secondary and inferior force. Chief amongst them may be noted physical injuries, and profound and lasting maladies—especially such as originate from the influence of some constitutional poison—as for example, malaria or contagion.

But these considerations, although plausible, necessarily lack the element of demonstration. The mind of man has not been directed towards the subject in the light of experiment; and human life is too short to collect satisfactory data upon which to base very definite conclusions.

There are other elements, however, which enter legitimately into an inquiry respecting the nature of inebriety, and which are too important to ignore. They go a great way in explaining inebriety as a disease; and, in fact, in many instances, they clearly define the nature and boundaries of the alcoholic malady.

There are several distinct heads under which inebriety may be considered as a form of disease. These may be grouped, however, into one or the other of two great divisions:

1. Inebriety may be viewed as the offspring of some severe physical injury; or of such profound morbid condition as will leave the organism impaired and degenerated.

2. Or inebriety may be considered as a disease *sui generis*—one which must find its root in the human constitution through force of heredity, or through imperceptible changes as life progresses—as through steady and heedless drinking.

The distinctions implied in these several groupings exist, however, more in appearance than in reality—as will be perceived upon further investigation.

It is well known that wounds, particularly of the head, are often followed by a violent crave, usually periodical, for intoxication. It is true also that serious disorders arising from some subtile but effective poison—are sometimes followed by persistent dipsomaniacal excesses.

Again, it is admitted that long continued mental strain and anxiety, may so lower the tone of the constitution, that inebriety is very liable to become developed. This is perceived in innumerable instances, where old soldiers, who have passed through the civil war unscathed, nevertheless fall into habits of drunkenness.

Of course, the alcoholic constitutions may become hereditary through the physical degeneracy it brings upon the organism.

These facts open wide a door that leads to useful knowledge.

Possibly a person who has been wounded, may be cured of inebriety by a surgical operation—and again, where an operation may be impracticable, the inebriety may prove insensible to other measures of relief. Sometimes, too, the depressed constitution of the drunkard may be improved by medical treatment and hygiene, and the drinking habit may thus be overcome.

The *habit* of dipsomaniacal excess, may be weakened by a series of carefully conducted measures, adopted with a view to break in upon the *periodicity* of the disease. This may be done by watching the stage of restlessness and fretfulness, and, before the judgment and moral principles are overwhelmed by the violence of the neurotic crave, withdrawing the patient from the reach and influence of alcohol—until the urgency of the desire is abated. The nervous organism is full of systems and sub-systems of periodical habits. Break them up by persistent interference and interruption, and distempers associated with them will disappear.

Here is clearly implied, or rather displayed in one general group of sufferers, the chief, if not the only cause of inebriety. That cause is, a depressed, degenerate, inadequate nervous system. Still the causes which underlie the depraved condition of the nervous functions, may be, and truly are widely different in their nature.

If, then, inebriety springs so readily from depressed nervous energies when it is brought on through physical injuries, why may we not conclude that inebriety in other instances, may be a symptom of defective powers? There are innumerable sources whence the nervous functions suffer impairment, other than wounds. Hereditary defects, mental troubles arising from the vicissitudes of life, various organic maladies—all may be assumed to have a tendency towards the development of inebriety; while many constitutional proclivities and deficiencies, of which the individual is unconscious, likewise may lead to the establishment of the alcoholic crave. Certain persons do not feel this morbid longing till late in life: while in others, it abates as age advances. These facts point to peculiar constitutional modifications, occurring at stated periods, in particular family strains.

Inebriety, therefore, even though attended by a disposition seemingly callous to every sentiment of honor and morality, is probably evidence, at least to some extent, of a depressed, unstable, and inefficient constitution. Facts as they appear upon the surface, are often exasperating to the last degree. But in every instance of persistent inebriety, there is quite likely—hidden away in an unsuspected part of the organism, some nagging, physical degeneracy.

If there are any exceptions to the rule that inebriety is either a disease in itself, or represents the establishment and activity of some other disease, they are few and indefinite.

But as a variety of causes may be operative in breaking down the powers of the constitution, and many others may conspire to keep these powers impaired, it is evident that the treatment of inebriety must consist in the application of many remedies—and often indeed, of the most dissimilar and even opposite characters. There is no royal road to the cure of inebriety. It is a way difficult, often obscure, and tedious.

An example or two will suffice to indicate the dubious and hidden paths that it is necessary to traverse, in treating the alcoholic besetment.

Heart diseases are common in habitual drunkards. They are frequently developed from the effects of alcohol upon the mechanism of the circulation. But *hereditary* heart affections also, are by no means of rare occurrence; and who knows how much a congenitally defective heart has had to do in driving its possessor to drink? Instability and inquietude of mind and disposition are the often accompaniments of heart trouble. Alcohol (taken either designedly or by chance) will, perhaps, alleviate and steady the disturbed feelings in cases of heart irregularity—and without clearly knowing why, an individual may thus acquire the alcoholic habit. The mental despondencies of heart disease and of dipsomania are much of the same order; and they come very often, no doubt, from one and the same cause, namely, heart disease.

Affections of the lungs, or of the brain, may lead their victims unconsciously into inebriate habits, by reason of the anæsthetic and pleasing effects of alcohol. The so-called alcoholic heredity is, in such cases as these, simply the counterpart of the physical heredity of heart, lung and brain diseases. The inebriate heredity, associated with physical defects, may not always be easily distinguished from the purely alcoholic. But there is a wide distinction to be made between them, both in origin and treatment.

In the light of the foregoing facts and principles, the subjoined notices, taken from copies of the Cleveland *Leader*, of 1886, appear to me of peculiar interest. The exact date of the first excerpt is not remembered. Here it is:

THE BLUE RIBBON TEMPERANCE UNION.—A good-sized audience attended the regular meeting of the Blue Ribbon Temperance Union at Doan's Armory in the East End, last evening. Professor Wood occupied the chair. Rev. B. F. Bowen was present, having just returned from a campaign of two months in Western Pennsylvania, and he delivered an interesting address upon the development of the temperance movement.

This struck me as meaning something more than what appeared upon the surface. It looked, as read "between the lines," like a cordial endorsement of a man just entering upon a new and improved career.

A short time afterwards, that is, in the issue of the *Leader* of the date October 13, 1886, appeared the following particulars:

Into the Gutter Again.—*Benjamin F. Bowen Sentenced to the Workhouse—A Pastoral Letter.*—Rev. Benjamin F. Bowen's fall from grace is complete. The efforts made by kindly disposed persons to lift him from the depths to which he had fallen through drink have been disregarded, and he is now an inmate of the Workhouse. On Monday night Bowen reached home in an intoxicated condition, and immediately proceeded to create a disturbance. The members of his family were subjected to abuse and finally driven into the street. At that stage of the performance his son-in-law interfered, and delivered him over to the police. Judge Hutchins put an effectual quietus on Bowen in the Police Court yesterday by fining him $10 and costs, and sentencing him to serve thirty days in the Workhouse. Bowen was formerly a Baptist minister, but was removed from the pulpit for misconduct. After some years of dissipation, he apparently reformed during the great Murphy temperance revival in this city a year ago. He conducted himself in a proper manner for several months, and then gave way again to his old craving for drink.

The following letter will be of interest to the many persons from whom Bowen has solicited aid:

Cleveland, O., October 11, 1886.

Having learned that B. F. Bowen, a former Baptist minister, is representing hims[illegible] ergyman of our denomination, and by erroneous [illegible] sympathy and securing money, we, the members [illegible] Baptist Ministers' Conference, feel called upon, with the deepest sorrow, publicly to announce, after a careful investigation of Mr. Bowen's past and present life, that on account of gross intemperance and other vices, he, in our judgment, has forfeited all right to ministerial standing.

[Signed] George Thomas Dowling,
Pastor Euclid Avenue Church.
George G. Craft,
Pastor Willson Avenue Baptist Church.
Deacon Ezra Thomas,
Com. for Northern Ohio Baptist Ministers' Conference.

And now, after five years, the mystery is solved. In the same paper—the Cleveland *Leader*—of the date October 6, 1891, this paragraph may be found, to wit:

Carried a Bullet Twenty-six Years.—At the request of the late Rev. Benjamin F. Bowen, after his death, which recently occurred at the Cleveland Hospital for the Insane, a post-mortem examination of his remains was made. In the left lung the surgeons found a minie ball weighing 1¾ oz. Mr. Bowen was a brave Union soldier in the war of the Rebellion, and was wounded in battle. A Rebel bullet entered his left cheek, and ploughed its way through his body until it found a lodgment in the lung. He carried the ball for twenty-six years. After the wound healed Mr. Bowen became subject to temporary fits of insanity. Prior to his death he said that he could feel the spells of insanity coming upon him, and in the hope of keeping his condition from the public, he sometimes drank liquor. Rev. Dr. J. H. Hartman is preparing a sketch of Mr. Bowen's life, for publication in the Baptist denominational papers. The sketch will be largely a vindication of the unfortunate clergyman.

Whether this man Bowen was an inebriate before he was shot in battle, I do not know. The injury was sufficient to shatter the best constitution, and beget a craving for intoxication. If, perchance, there was a wavering tendency to drink in earlier life, the wound would infallibly confirm that tendency.

This case carries with it, I think, its own commentary.

Very respectfully, etc., T. L. Wright, M.D.

Bellefontaine, O., October 15, 1891.

Analyses of Food Preparation.

To the Editor of the Journal of the American Medical Association:

Figures do not lie, but it is said that false inferences are occasionally drawn from skilful combinations of the cardinal numbers. Otherwise we would be unable to understand why it is that manufacturers of pepsin and othe proprietary articles can prove so much in their own fav by means of expert analyses. For instance, we may cite table containing an alleged analysis of various food prep rations appearing in the Philadelphia *Medical and Surgic Reporter*, Vol. lxv, page 612, issue of October 17, 1891, whic has been extensively copied.

The skilful compiler of the table did not exhaust the po sibilities in the way of calculations. For instance:

The relative food value of bovinine and beef meal, takin fresh lean beef as the standard, which contains 70 per cen of water, and taking into account the difference in the qua tity of moisture, would be

Bovinine contains 83.1 of water (according to table)
Beef-Meal " 8.84 " " " "
Beef-Steak " 70. " " " "

Reducing the above to a uniform standard of water, w have

Bovinine	70	Total albumen equals 17.81
Beef-Meal	70	" " " 9.83

But Professor Chittenden has shown in a recent analysi (Proceedings Philadelphia County Medical Society, Vol. xi p. 130), *that the proteid constituents of Beef-Meal are* ⅓ solu ble and ⅔ insoluble, which makes a still greater contrast:

	Total Albumen.	Soluble Proteid
Bovinine	17.81	17.81
Beef-Meal	9.83	3.28

when both are brought to the standard of fresh beef. O the other hand, by removing the superfluous moisture fro bovinine, we obtain a similar result:

	Water.	Total Albumen.	Soluble Proteid
Bovinine,	8.84	54.12	54.12
Beef-Meal	8.84	78.12	26.04

A more satisfactory way would be to compare the food value by the usual dose, instead of by the ounce or pound Thus:

	Dose.	Total Albumen.	Soluble Proteids
Bovinine	4 drachms	36 grains	36 grains
Beef-Meal	1 drachm	46.87 "	15.62 "

The absurdity of this style of argument, by which a liqui ready for administration to the sick, is compared with a dr powder, which requires preparation and is largely insoluble must be manifest to everyone who will give the subject moment's thought. In the table referred to, the ver important fact is entirely overlooked, that all the protei materials in bovinine are not only soluble but in solutio and ready for absorption and assimilation. What othe food in the table can be used without preparation, by hypodermic injection?

After all, the value of an article of diet for the sick is not to be estimated by its cheapness in price but by its usefulness and availability in the particular case under consideration. In theory beef-steak might be the strongest and cheapest food for the convalescent and the invalid, but when digestion is feeble, or possibly entirely superseded for the time, the value of an article of food will be measured by its acceptability to the patient, the rapidity or slowness of absorption and its restorative qualities, rather than by its chemical formula or its cost per dose, in cents and fractions of a cent.

One other illustration of the worthlessness of the deductions is sought to be drawn from a table constructed like the one under consideration. It is well known that bovinine contains ten per cent. of old Bourbon whisky, which adds materially to its value as a general restorative and cardiac stimulant. This appears to have been, intentionally or unintentionally, overlooked and omitted from the anonymous analysis quoted by the author of the article in question, which leads to the conclusion that the doctor has been engaged in advertising a proprietary article, instead of promulgating scientific facts, which he apparently labored under the impression that he was doing when he wrote the article to which we have called attention.

Is it at all surprising that medical readers view with suspicion the results of analyses by experts employed by the manufacturers? Why can we not have an analytical board under the auspices or direct control of the American Medical Association, so that we may have all proprietary articles examined and the results published in The Journal, without fear or favor? Member A. M.A.

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SATURDAY, APRIL 30, 1892.

DRUG MANUFACTURERS AS MEDICAL TEACHERS.

The following circular has been sent to the profession:

> *Dear Doctor:*—At this season of the year the practitioner is called upon to treat patients who have spent a large portion of their time in the house during the winter. They have been breathing the confined house air, which, besides being rendered deficient in oxygen by the necessary combustion going on in stoves, lamps, and gas-jets, is, in addition, more or less vitiated by the poisonous emanations of organic life.
>
> During most of this time there has been imperfect physiological action because there has been complete oxidation. The inter-cellular spaces of the tissues have become clogged up with products of incomplete combustion—imperfect waste and repair.
>
> In consequence of these facts we notice a preponderance of *those diseases usually attributed to that indefinite cause*—impure blood.
>
> Hence, we observe the tendency to scrofulous manifestations—eruptions, glandular swellings, abscesses and ulcerations; also the tendency to a breaking down of the nervous system, with its varied phenomena; the tendency, again, to *a lack of prompt* response to treatment in acute diseases and slow convalescence from them; and finally, the tendency on the part of inflammatory conditions of the air passages at this time, unless specially guarded, to become chronic or to develop active degenerative and destructive processes.
>
> To correct the condition we need a remedy that promotes oxidation within the tissues themselves.
>
> Such a remedy is found in ——. However, not only does it thus promote active oxidation, but it also is itself deposited, in its changed or oxidized condition, within the tissues *as direct reconstructive* material, indispensable to healthy cells and sound tissue-walls.
>
> Thus it proves to be the true alterative agent, inasmuch as it at the same time renovates and nourishes.
>
> Under this remedy we observe an awakened organic action throughout the system and an improvement in every tissue. We soon observe better muscles, bones, nerves, hair, nails, skin, and mucous and serous membranes. The entire system awakens to a more vigorous life and performs its various functions with renewed activity.
>
> *In these facts may be* seen indications for the use of this remedy, especially at this season of the year, in cases which show consumptive, scrofulous or nervous tendencies.

The preparation referred to in this circular purports to be a mixture of a half dozen hypophosphites with nux vomica, erythroxylon coca, and "various adjuvants."

This has the familiar sound of the sarsaparilla advertisements of the daily press. The sentiments are the same, the logic (?) is the same, and the principle is the same.

A few technical terms have been introduced, but are used in so loose and indefinite a manner as to show that the one who wrote it has principally a befuddling object in view. This is an advertisement which is intended to promote the sale of a proprietary preparation, to extend its use at the hands of physicians. It is quite possible that a physician might, by the sight of it be induced by a hurried reading to prescribe the mixture it advocates, but it is quite certain that there are few so dull as not to be able to detect its sophistries upon a careful reading. It is unnecessary to review the advertisement itself, but it does seem desirable to call attention to its boldest statement, which is the advocacy of a mixture of hypophosphites, most excellent deoxidizing agents, for the purpose of promoting an exactly opposite process, viz., oxidation.

There is a legitimate field for manufacturing pharmacy, and with regard to it, we have naught but words of praise. It is legitimate, it is necessary, that there shall be special workers to supply in the purest quality, and in the best forms, the substances which clinical and scientific research have shown to be useful in the management of disease. But these substances must wait the demand for them. For a manufacturer to attempt to create a fictitious demand for his products by assuming the rôle of medical instructor, is an insult to the profession and a special insult to each individual practitioner to whom he sends his circular. As we see, such men do not hesitate to manufacture explanations of pathological conditions which will apparently favor the use of their remedies.

How absurd it is for men engaged in commercial pursuits to attempt to solve the great and intricate problems of medicine, and how criminal it is to permit the statements of such interested parties to have the slightest weight in deciding questions of treatment.

These are the firms who send drummers out to assist physicians in their work. There is nothing more aggravating than the representative from such houses. He is frequently a doctor who has failed in his own profession, or who has not yet entered upon it, or else a drug clerk, or a man who has already proven himself successful in selling new lines of stoves, or boots and shoes. And yet these very men attempt to instruct medical men on physiological and pathological points, and means of treatment, when they have once succeeded in forcing themselves upon their attention. And we hear of these men discussing how little some physicians know of the matter they have in hand. Poor fools, they forget that the poorest medical man they meet, is infinitely their superior in point of practical knowledge, and has long ago gone over the subjects they present at the hands of qualified and trained medical teachers.

We are of those who believe that the standard of the medical profession in the United States is high; that the medical men of this country are better educated, and far abler in practice than it is the custom of some pessimists to admit. It never was so low as to profitably receive professional instruction from uneducated laymen.

It is the duty of the profession to uphold its own honor, and to reject such circulars as the one quoted with the contempt they deserve, and to hereafter refuse to consult with the traveling drummer.

A MEDICAL LIBEL SUIT AMICABLY SETTLED.

A libel suit against Mr. Lawson Tait, of Birmingham, brought at the last Manchester assizes, has been placated in some way out of court, very much to the satisfaction of English medical circles. Mr. Tait, as a surgeon, has many an admirer in this country, but when he is contemplated in the light of a controversialist he has not very many imitators here. He reminds us of Dr. Johnson's definition of a Scotchman as being "a person who is always positive, and sometimes right."

In this libel suit, if the account given in the London papers is reliable, Mr. Tait was positive and wrong. Briefly narrated, the trouble arose in this manner: Dr. Andrew Denholm had treated a Manchester lady-patient according to the Apostoli method of electrolysis, her disease being regarded as due to a fibroid uterine tumor. An accident, in the use of the electrodes, caused a vesico-vaginal fistula. On this account, Dr. Denholm lost his control of the patient, and she passed into the treatment of Mr. Tait, who did a laparotomy and removed the growth. But the patient died, and Mr. Tait wrote a letter to the husband of the lady, saying that in his opinion, the death was attributable to hæmorrhage, due to the rupture of a vessel caused by the injurious inflammation and sloughing set up in the tissues by the electrical treatment. But for this, Mr. Tait stated in his letter, the case would have been unhampered, and recovery after operation nearly sure.

When the knowledge of this letter came to Dr. Denholm, he could not rest under its aspersions, but caused an autopsy to be made of the deceased patient, in the presence of a competent jury or company of medical men. The autopsy was reported as refuting entirely the allegations of Mr. Tait as to the effects of the earlier treatment by electrolysis: there had been no inflammation or adhesions, or hæmorrhage of any moment, sufficient to determine the death of the patient. The fatal issue was apparently caused by peritonitis.

The day for the hearing of the case fell in the latter part of March, when it was announced that the case had been settled out of court, a juror was withdrawn and the contention ceased to be public property. This conclusion was the best attainable after the case had been advanced so far. It had been much better if arbitration before a mutually chosen medical jury could have been arranged earlier in the dispute. To have submitted a case, involving so many technical and intricate questions, to a lay jury, would have been to invite a miscarriage of justice.

SOME FEATURES OF ABDOMINAL SURGERY AT PHILADELPHIA.

The *American Gynecological Journal*, April, contains a letter by Dr. A. H. Cordier, of Macpherson, Kan., recounting his recent visit among the gynecic operators of *Philadelphia*. He finds with them a low rate of mortality in abdominal work; probably as low as can be shown in any other city in the world. Among the others, Dr. Joseph Price is able to quote a mortality of less than 3 per centum in the abdominal sections of last year. In 1891, he had performed—up to the time that the visit of Dr. Cordier was made—220 such operations, with five deaths. In this list is included ovariotomies, hysterectomies, intestinal resections, as well as others of less hazardous nature. These figures, together with the opportunities the writer had of assisting at the operating table of Dr. Price, indicate very clearly to his mind that the methods of Dr. Price have approached as nearly to perfection as can be expected.

Some of the leading points affecting the technique of abdominal surgery may be briefly mentioned. A preparatory treatment, in nearly all cases, includes "scouring inside and out." The bowels are kept regular by salines, after operation, and morphia is avoided. Even in cases where there is intestinal resection, sulphate of magnesia is given on the next day. The anæsthetic is ether. The instruments are few in number, and sterilized by boiling. The ligatures are washed in distilled water during the operation: they are always carefully counted before and after. Pure Chinese silk is the preferred ligature material, as light as is compatible with safety; but for the external wound silkworm gut sutures are employed. The median incision is the one most often made. Ventral hernia has been an infrequent sequel. Adhesions are freely broken down, and thoroughness as to the removal of endangering suppurating surfaces indicates the surgeon's dread of leaving behind any part of diseased sack or fold that can only lead to septic peritonitis and death a few days after the operation. The drainage tube is highly valued, and the one generally used is the straight glass make that comes to us from London. The emptying of the tube is done as often as it refills, even if that takes place every twenty minutes. The tube is emptied by means of a piston syringe having a long nozzle, disturbing the patient not at all. In favorable cases the tube has not to be retained longer than two or three days. The opening left by it soon closes, and it is the teaching of Dr. Price that there are no more cases of ventral hernia following this line of procedure than there are when drainage is not resorted to. The drainage tube, he holds, has lessened the abdominal death-rate. Drainage tubes must be of different lengths and sizes. The pedicle, in ovariotomy and pus-tube cases, is ligated with stout silk and "dropped." Hot distilled water is used to flush the peritoneal cavity whenever profuse hæmorrhage or an escape of pus complicates the course of an operation.

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subjects they present at the hands of qualified and trained medical teachers.

We are of those who believe that the standard of the medical profession in the United States is high; that the medical men of this country are better educated, and far abler in practice than it is the custom of some pessimists to admit. It never was so low as to profitably receive professional instruction from uneducated laymen.

It is the duty of the profession to uphold its own honor, and to reject such circulars as the one quoted with the contempt they deserve, and to hereafter refuse to consult with the traveling drummer.

A MEDICAL LIBEL SUIT AMICABLY SETTLED.

A libel suit against MR. LAWSON TAIT, of Birmingham, brought at the last Manchester assizes, has been placated in some way out of court, very much to the satisfaction of English medical circles. MR. TAIT, as a surgeon, has many an admirer in this country, but when he is contemplated in the light of a controversialist he has not very many imitators here. He reminds us of DR. JOHNSON'S definition of a Scotchman as being "a person who is always positive, and sometimes right."

In this libel suit, if the account given in the London papers is reliable, MR. TAIT was positive and wrong. Briefly narrated, the trouble arose in this manner: DR. ANDREW DENHOLM had treated a Manchester lady-patient according to the APOSTOLI method of electrolysis, her disease being regarded as due to a fibroid uterine tumor. An accident, in the use of the electrodes, caused a vesico-vaginal fistula. On this account, DR. DENHOLM lost his control of the patient, and she passed into the treatment of MR. TAIT, who did a laparotomy and removed the growth. But the patient died, and MR. TAIT wrote a letter to the husband of the lady, saying that in his opinion, the death was attributable to hæmorrhage, due to the rupture of a vessel caused by the injurious inflammation and sloughing set up in the tissues by the electrical treatment. But for this, MR. TAIT stated in his letter, the case would have been unhampered, and recovery after operation nearly sure.

When the knowledge of this letter came to DR. DENHOLM, he could not rest under its aspersions, but caused an autopsy to be made of the deceased patient, in the presence of a competent jury or company of medical men. The autopsy was reported as refuting entirely the allegations of MR. TAIT as to the effects of the earlier treatment by electrolysis: there had been no inflammation or adhesions, or hæmorrhage of any moment, sufficient to determine the death of the patient. The fatal issue was apparently caused by peritonitis.

The day for the hearing of the case fell in the latter part of March, when it was announced that the case had been settled out of court, a juror was withdrawn and the contention ceased to be public property. This conclusion was the best attainable after the case had been advanced so far. It had been much better if arbitration before a mutually chosen medical jury could have been arranged earlier in the dispute. To have submitted a case, involving so many technical and intricate questions, to a lay jury, would have been to invite a miscarriage of justice.

SOME FEATURES OF ABDOMINAL SURGERY AT PHILADELPHIA.

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THE SECTIONS.

Interest in the work of the several sections of the American Medical Association was never greater than this year. Fears being entertained by some of the officers that the time allotted will be scarcely sufficient to hear all the papers announced and the discussions which should follow; morning sessions of the sections will undoubtedly be agreed upon at the general session of the first day. The increase of members attending the annual meetings makes an arrangement of this sort necessary.

The Sections Committee which will meet on Monday will take up this subject and report such arrangements as will meet the demands of the occasion.

The progress made in the whole field of medicine will be ably reflected by those who have announced their intention to be present. The program will be not only full, but very select.

The chairmen have been active in securing men of ability to open the discussions.

PURE FOODS AND PURE DRUGS.

As we go to press the following important letter comes to hand. Immediate action on the part of medical societies can aid this measure very much.

This makes us realize with emphasis the great need for a Public Health Officer as a member of the President's Cabinet.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

I have been informed that a combination of wholesale druggists is at work, through liberally paid editorials in prominent newspapers and other methods of bribery, to create a hostile sentiment in the country towards the Pure Food Bill now before Congress, passed the Senate and unanimously recommended by the House Committee.

The articles appear to have been written by the same pen, used by the same hand. They are gross, unintelligent and most absurd misrepresentations as to the provisions of the bill. Very many druggists of high character advocate its passage. Some of the very best men in the National Wholesale Druggists' Association were its promoters and advisers from the beginning.

Is it not possible to interest the profession throughout the country in the effort, on some organized line, to help counteract the wicked work of these adulterators and manipulators who are thus seeking to poison the channels of information and of public sentiment for selfish gain? Cannot the physicians of the country realize that they ought to make a universal appeal to the House of Representatives, by petition and otherwise, to pass the Pure Food Bill? Let physicians, wherever they may be, who can reach a newspaper, put something into it, in order that the fact may become universally advertised that, through such prompt methods as here indicated, these persons who have been poisoning the food and drug supplies of the people, are striving to defeat this legislation which, if enacted, will take away their wicked occupation.

Let all physicians who read this, at once write on a postal card: "*I am in favor of the Pure Food Bill and urge its passage,*" sign and send it to the members for their Congressional District.

This is a matter of protecting the health of the whole nation. Respectfully yours,

EPHRAIM CUTTER,
Sec'y Section of Physiology and Dietetics.

EDITORIAL NOTES.

AMERICAN MEDICAL TEMPERANCE ASSOCIATION.—The first anniversary meeting of this Association will be held on Thursday, June 9, 1892, in Detroit, Michigan. The room in which it will be held and the hour of assembling will be stated hereafter. An address will be delivered by the president on the important differences in physiological and therapeutic effects on the living system, produced by those hydro-carbons developed by vegetable and animal nutrition, as starch, sugar, gum and fat or oils; and those resulting from retrograde metamorphosis or bacteriological action, as the alcohols, ptomaines, leucomaines, etc. Several papers on important questions will be presented and discussed by members of the Association. The objects of this Association are stated in the second article of its constitution is as follows:

> II. The objects of the Association are to advance the practice of Total Abstinence in and through the medical profession, and to promote investigation as to the action of alcohol in health and disease, and it aims at being a bond of union among medical abstainers scattered all over our country. It admits as members regular medical practitioners who are practical abstainers from all alcoholic liquors as beverages.
>
> Members are not required to sign any pledge, but if such, for any reason, cease to be total abstainers, it is expected that notice of withdrawal from the Association will forthwith be sent to the Secretary. The liberty of members in prescribing alcohol as a medicine is entirely uncontrolled.

A large and profitable meeting is expected. Physicians who desire to become members before the meeting can do so by addressing the Secretary, T. D. Crothers M.D., Hartford, Connecticut, or the President, N. S. Davis, M.D., Chicago, Illinois.

THE DETROIT OPERA HOUSE will be the next place of meeting. The Surgical Section will be in the same building, and halls for the other Sections are all within a radius of three or four blocks. The Detroit Rink has been taken for the exhibit hall. This has a floor space of 100x170 feet, and the chairman of the committee of arrangements says this will be filled.

Those dealers in physicians' supplies, who have not already secured space, will do well to lose no time in writing to Dr. H. O. Walker for information.

The plan adopted of allowing delegates to register in advance is an excellent arrangement, as it is a time saver. Another prudent procedure for advance delegates to take is to secure hotel accomodations before leaving home.

Tuesday evening the Profession of Detroit will give a reception at the Detroit Light Infantry Parlors.

Wednesday evening, there will be a number of receptions at private houses.

Thursday, at 3 P.M., there will be a boat ride on the river, with a landing for supper, at one of the summer resorts.

In fact, we infer that about all the delegates and their wives will have to do, after entering the State of Michigan, in order to be the recipients of a most generous hospitality, will be to press the button, when seen on a Michigan doctor, and he will do the rest.

The Michigan State Medical Society meets next week at Flint, in other words, the Committee on entertainment, of the American Medical Association will, on the 5th day of May, assemble in Flint; it is all the same either way.

AN ETHER-SOAP FOR SURGEONS.—Dr. W. W. Keen of Philadelphia, writes to the *Therapeutic Gazette*, March, as to the advantages of an ethereal soap. He has found it the best yet tried for cleansing the hands and keeping them soft. It has the good effect, also, of deoderizing the hands after handling pathological specimens and the like. The bichloride of mercury can be dissolved in it in the ordinary proportions. It can be used in office or in clinic, and Dr. Keen has so used constantly for some time, with great satisfaction. It was devised by Mr. John Johnson, a nurse at the clinic of the Jefferson Medical College Hospital.

BOOK REVIEWS.

THE MÜTTER LECTURES ON SURGICAL PATHOLOGY. By ROSWELL PARK, A.M., M.D., pp. 293 cl. (Reprinted from the Annals of Surgery.)

This volume illustrates the radical changes that certain branches of surgical pathology have undergone, more fully than any text book of the last decade, for there is not a retrospective glance from cover to cover. The author deals exclusively with the present. To those whose knowledge of surgical pathology is confined to Wagner, Billroth and Rokitansky this book will open up a *terra incognita*. The doings of the bacilli, the pathogenic effects of the ptomaines and the toxalbumens are set forth with circumspection and clearness. It is at first a little startling to see dysentery, cholera, scarlatina, pneumonia, typhoid, measles and variola treated of as topics of interest to the surgical pathologist, but this treatment seems to be a quite logical sequence of the general theory of surgical bacteriology for the diseases named are brought under the heading of *"Mixed and Secondary Infections;"* but however closely one may agree with the author that the suppurative lesions accompanying these diseases may be fairly included in the domain of surgical pathology, it certainly does strain a point to include influenza as a surgical affection; but the author is always interesting, many times original, and invariably instructive. We heartily commend the book.

TRANSACTIONS OF THE NEW YORK STATE MEDICAL ASSOCIATION FOR THE YEAR 1891. Volume VIII. E. D. FERGUSON M.D., of Troy, Editor, and Secretary. New York City, 1892.

This comparatively young organization presents about the finest volume of proceedings that comes to the reviewer's table. Exteriorly the series of eight stout octavo annuals has a handsome appearance, while interiorly the merits are various but generally creditable. The issue for 1891 contains 670 pages, well-printed and fairly well-indexed. The annual address of the President, Dr. Stephen Smith, himself a veteran teacher, treats of the ideal medical school, patterned after that which two thousand years ago was run at Cos by Hippocrates. Dr. Smith finds encouragement in some of the educational reforms that are now taking place in our schools, so that he believes that "the lost art of teaching medicine", known to the Greeks, is about to be rediscovered. All medical teachers who have not beheld the picture of Hippocrates in the midst of his class of students can find inspiration in a view of that scene as sketched in this address.

The discussion of Peritonitis and its Treatment occupies over one hundred pages. Among those who took part were Drs. A. L. Carroll, Stephen Smith, Heneage Gibbes, Harold Ernst, Victor Vaughan, J. Lewis Smith, Tucker Harrison, John Shrady, B. A. Watson, Leale, Fell, Truax, Ferguson, Senn, H. O. Marcy, Janeway, Manley and McCollom. There was also a discussion on Alienism, and the causes of insanity, participated in by Drs. J. B. Andrews, Hurd of Baltimore, E. N. Brush, Wise, Blumer and Granger. The address by Dr. Nicholas Senn on the surgery of the pylorus has already been referred to in our editorial columns. The same is true of a therapeutical paper by the junior Dr. Squibb of Brooklyn. Dr. H. D. Didama, the first President of the Association in 1884, chose for his subject, the changing forms of quackery that are grouped under "mental therapeutic influences." Dr. H. O. Marcy took part in the discussion. Dr. John A. Wyeth has a paper on mammary cancer, with suggestions as to the reduction of the ratio of mortality after operation. Dr. C. S. Bull treats of orbital tumors secondary to tumors of neighboring bony cavities. Dr. Palmer Dudley delivered a gynæcological address on some of the accidents which have attended the progress of this branch of surgery during the past decade. This paper is accompanied with a tabular statement as to seventy-four cases of intestinal injury during or after laparotomy, the result offering a laborious and permanently valuable compilation for the service of other surgeons. The Orton Prize Essay by Dr. Howard Van Rensselaer, of Albany, treats of impure air and the ventilation of private dwellings. "Money", he says, "is the foundation of perfect ventilation. If expense is no object, it is easy to ventilate a house, but in dwellings with small rooms it is impossible at the same time to have good ventilation, sufficient warmth in winter, and cheapness. One of the three must suffer, and it is usually ventilation." An address on biblical medicine, pointing out the fallacies of faith-cure, mind-cure and the like, is a very elaborate and exhaustive study by the Rev. W. C. Bitting of New York. Dr. Homer Jewett has a paper on the pseudo-parasitism of the larvæ of dipteræ in the human intestines, a well-reported instance of the "rat-tail" larval visitant of man, about which very little is definitely known, but which is believed to be admitted into the human alimentary canal by drinking-water, or by the ingestion of uncooked, waterside-growing vegetables, such as salads and water-cress. Dr. Ludlow Chrystie had a paper on the treatment of disease of the knee-joint in its convalescent stage. The volume closes with a necrology for 1891, and copious lists of members and officers. The total membership is stated at 740, a very large proportion of which number is also contained in the American Association.

SURGICAL DISEASES OF THE OVARIES AND FALLOPIAN TUBES, INCLUDING TUBAL PREGNANCY, by J. BLAND SUTTON, F. R. C. S. Illustrated.

In the handling of this subject, Dr. Bland brings in play his vast knowledge of comparative anatomy and pathology. The subject is treated therefore in a much more scientific manner than is customary in treatises of this kind. Notwithstanding his scientific management of the subject, the author's extreme dogmatism is strongly reminiscent of another most able exponent of English gynecology. In the matter of tubal pregnancy, the author joins hands with Tait in tearing down the older pathological ideas. The book is handsomely illustrated, most of the views being new.

The Diseases of the Mouth in Children, by F. Forchheimer, M.D., Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio. Philadelphia: J. B. Lippincott Company, 1892.

The author divides the non-surgical diseases of the mouth as follows: Stomatitis catarrhalis; stomatitis aphthosa; stomatitis mycosa; stomatitis ulcerosa; stomatitis gangrenosa; stomatitis crouposa-diphtheritica; stomatitis syphilitica.

The chapter on aphthous stomatitis is particularly valuable. The term has been used in such widely different senses by different writers, that a strong, authoritative definition and exposition of it, has become most desirable. Dr. Forchheimer separates this disease most clearly and satisfactorily from the other diseases of the mouth, and as his classification includes all of the non-surgical diseases of the mouth, he gives to this much abused term a definite meaning, which it has long needed.

Stomatitis ulcerosa is a disease which has long attracted the attention of pædiatricians and the exposition which it has received in this book can not fail to be most gratifying to those familiar with the subject. The clear elucidation of the earlier stages of this affection is particularly valuable.

The chapter on dentition is the one which will attract the most attention. The author has not failed in times gone by to clearly express his views on this subject, and all familiar with his writings are not surprised to find him dealing a heavy blow at the popular idea of the pathology of dentition. Dr. Forchheimer does not believe that dentition is responsible for any of the manifold evils that are usually attributed to it, and this chapter is a particularly strong argument for these views. It must be borne in mind that these are the views of a man who has for years concerned himself in the clinical observation of sick children, who has thoroughly familiarized himself with all the means of diagnosis in infancy, and his views will therefore be given great weight. It is certainly true that "teething" is a convenient diagnosis; it is always acceptable to the laity, but it usually is a substitute for the correct diagnosis, which could have been made, had the practitioner been more thoroughly familiar with the pathology and clinical manifestations of infancy.

Whether one agrees wholly with the author or not upon this subject, it cannot be denied but that the doctrine of "teething" has been much overdone, and that many deaths have resulted from belief in this doctrine, which could have been avoided. The influence of dentition in the production of disease in infants is certainly so small that better results will follow if it be ignored entirely. It is high time to start a crusade against the teething doctrine.

The Pocket Pharmacy, by John Aulde, M.D. New York: D. Appleton & Co., 1892.

In this work Dr. Aulde shows the clinical uses of twenty-four different remedies. These remedies are all prepared in pill or tablet form, and constitute a suitable outfit for a small pocket case.

Under each drug appears alphabetically a list of the conditions in which it may be prescribed, and with each topic, short but accurate directions for the particular use of the drug. The author is an advocate of small doses frequently repeated. By a careful study of this small book, and by providing himself with the necessary outfit, there is no doubt but that the practitioner would be benefited.

The *Medical Press and Circular*.—This venerable English journal of date of March 30, has just arrived, printed throughout in new type, so clean-cut and well-set that it is a pleasure to take up the articles in every department, and read them. Even the advertisements, for the most part, are set in this spick and span new dress. The paper is of a creamy tint, restful to the eyes. Taken as a whole, *The Press and Circular* might serve some of our slovenly-looking contemporaries as an example of the effects of brains and neatness, when mixed with printers' ink.

MISCELLANY.

In our last issue on page 536 Dr. Wm. F. Hutchinson was referred to as formerly of Providence. The Doctor is still of Providence and has no thought of any other home.

Association of Medical Superintendents of American Institutions for the Insane.—The Forty-sixth Annual Meeting of this Association will be held at Washington, D. C., May 3, 4, 5, and 6, 1892. at the Arlington hotel.

Tuesday, May 3, 1892.

11 a.m.—Calling to order; Address of Welcome; Appointment of Committees; Recess; Election of Officers; President's Annual Address; Adjournment.

3 p.m.—Discussion: "The Surgical Treatment of Insanity, Epilepsy, etc." G. A. Blumer, M.D., Utica, N. Y., Chas. G. Wagner, M.D., Binghamton, N. Y., Howard A. Kelly, M.D., Prof. of Gynecology, Johns Hopkins Hospital, Baltimore, Md., Geo. H. Rohe, M.D., Catonsville, Md., Chas. A. L. Reed, M.D., Professor of Gynecology, Cincinnati College of Medicine, Cincinnati, O., Alex. J. C. Skene, M.D., Gynecologist to the King's County Asylum, N. Y., Professor Gynecology, Long Island College Hospital, Brooklyn, N. Y.

8 p.m.—"Results from the Study of the Brain of Laura Bridgman." By H. H. Donaldson, M.D., Professor of Neurology, Clark University, Worcester, Mass.

"Mechanical Restraint—A Valuable Aid in the Treatment of the Insane." By H. N. Rucker, M.D., Stockton, Cal.

"What is Restraint?" By C. E. Wright, M.D., Indianapolis, Ind.

Wednesday, May 4.

10:30 a. m.—Unfinished Business; Reports of Committees, etc.; Report on Manual Autopsies; Suggestions for meeting of 1893.

Discussion: "Improved Methods of Caring for the Insane."

John B. Chapin, M.D., Philadelphia, Pa.—General Suggestions; Increased Attention to Acute Cases; The Cultivation of the Hospital Idea.

Benjamin Blackford, M.D., Staunton, Va.—Economy in Hospital Building, Description of New Buildings at Staunton; Economical Use of Patients' Work in Conjunction with the Organized Labor of the Institution.

Richard Dewey, M.D., Kankakee, Ill.—Employment.

Henry M. Bannister, M. D., Kankakee, Ill.—Therapeutics.

No session will be held in the afternoon. The time will be devoted to an Excursion in carriages to the Soldiers' Home.

8:30 to 11 p.m.

Social Reunion. Reception by the President of the Association. Parlors of the Arlington Hotel.

Thursday, May 5.

10:30 a.m.—Report on Reorganization.

"Separate Provision fo Epileptics, both Public and Private." By Henry R. Steadman, M.D., Roslindale, Mass.

A plea for special and separate care of Epileptics in institutions on the cottage plan exclusively for that class. Their removal from almshouses and asylums for reasons which are obvious, will be urged. A description of Foreign Epileptic colonies will be given, as well as other means usual and unusual for the cure of Epileptics. The probable number of Epileptics at large will be given, and the especial need of a refuge for such cases, to whom only the almshouse and the asylum are now open. The disadvantage of their inter-mixture with the insane, to both classes, and the movement taking place in this direction and its progress in different States will be touched upon.

"Affections of Speech in the Insane." By Theodore H. Kellogg, M.D., Flushing, Long Island, N. Y. Affections of speech dependent directly upon physical disease, also those due to disorder of the physical mechanism of speech, with cortical and organic brain lesions will be considered. Other points noticed will be rhythmic variations in speech, changes in speech rate, the invention and use of new words, pitch quality and intonation of the insane voice, motor and aphasic difficulties.

The afternoon of Thursday will be devoted to an Excursion to Marshall Hall.

8 P.M.—"On the motives which Govern the Criminal acts of the Insane." By H. E. Allison, M.D., Auburn, N. Y. Classification of the Criminal Insane: 1. Those who primarily become insane after conviction and while undergoing sentence. 2. Those who are sentenced and imprisoned for crimes committed while insane, the fact of insanity not being recognized at time of trial. 3. Those for whom the plea of insanity is successfully interposed for "criminal" acts committed while insane, or in whom insanity develops before sentence is pronounced. Methods of disposition and custody of the three classes. Characteristics of the three classes as to social conditions, mental states and abstract knowledge of right and wrong. Character of the crimes committed by the latter class, usually acts of violence and assaults upon the person. Wide prevalence of derangement of the special senses in the third class with hallucinations and delusions of persecution, often associated with much intelligence and understanding. Their processes of reasoning may be logical, but wrong premises exist—the product of diseased minds. What constitutes the dangerous lunatic? Mental characteristics of those who commit minor offenses. Legal and medical tests of responsibility.

"The Care of the Criminal Insane." By O. R. Long, M.D., Ionia, Mich.

Obituary notices of Drs. Richard Gundry, J. P. Bancroft, S. S. Shultz, W. W. Reeves and Joseph Draper.

Friday, May 6.

10:30 A.M.—"The Adverse Consequences of Repression." By Charles W. Page, M.D., Danvers, Mass. The case of a delicate, refined young lady, who uttered obscene and profane language when insane, is cited to illustrate the mistake made by those who attempt to develop mind morals and character upon a scheme of negation and repression. Energy in every form is a positive force and strength of mind and character are best promoted by storing the mind with ideals and thoughts which call for positive action.

"The Cause of Insanity." By R. M. Bucke, M.D., London, Ontario. The attempt will be made to show that the greater number of cases are due to the "instability of the human mind, the result of its recent development."

"Sexual Vices—Their Relation to Insanity, Causative or Consequent." By R. J. Preston, M.D., Marion, Va.

Report of committee on time and place of next meeting.

Adjournment.

ILLINOIS STATE MEDICAL SOCIETY.—The 42nd annual meeting will be held at Vandalia, May 17, 18, 19, 1892.

The meeting will be called to order on Tuesday *morning* at 10 o'clock, in the G. A. R. Hall.

Sections: Practice of Medicine: Chairman, Thos. M. Cullimore, Jacksonville; Secretary, J. W. Whitmire, Forrest; Address, William E. Quine, Chicago. Surgery, Surgical Specialties and Obstetrics: Chairman, Wm. J. Chenoweth, Decatur; Secretary, J. Homer Coulter, Peoria. Address, James H. Etheridge, Chicago. Etiology and State Medicine: Chairman, James M. G. Carter, Waukegan; Secretary, George N. Krieder, Springfield; Address, Elbert Wing, Chicago.

Committees: Arrangements: Francis B. Haller, Vandalia; Moses Haynes; J. H. Miller; R. T. Higgins; Geo. A. Martin. Publication: David W. Graham, Chicago; Nathan S. Davis, Jr., Chicago; George N. Krieder, Springfield. Medical Legislation: Frederick C. Schaefer, Chicago; B. M. Griffith, Springfield; Francis B. Haller, Vandalia; Thomas M. McIlvaine, Peoria; Geo. R. Cowan, Girard. Legislation for the Insane: Ephraim Ingals, Chicago; Richard Dewey, Kankakee; John P. Mathews, Carlinville; Edgar P. Cook, Mendota; Charles W. Earle, Chicago. Necrology: Ephraim Ingals, Chicago; Robert Boal, Peoria; John H. Rauch, Springfield. Biography: John H. Hollister, Chicago.

Special Notices: The former provisions of the constitution, relating to delegates from local Societies to the State Society, were abolished two years ago. Membership is acquired now only according to the following:

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Sec. 2. They may become members at any time by furnishing the Treasurer or Permanent Secretary a certificate of membership and good standing in such local society, the certificate to be signed by the President and Secretary thereof, and accompanied by one year's dues, ($3.00).

Those who desire to attend the meeting who are not already members should bring the prescribed certificate.

3. Members desiring to read papers should notify the officers of the appropriate Sections at once.

4. A detailed programme will be issued and mailed to members before the meeting.

5. Delegates to the American Medical Association, which meets in Detroit, June 7, will be appointed at this meeting. D. W. GRAHAM, Permanent Secretary.

OHIO STATE MEDICAL SOCIETY.—Forty-seventh annual meeting at Cincinnati, Ohio, May 4, 5, and 6, 1892.

First Session—Wednesday, May 4.

1. Call to order.
2. Prayer.
3. Report of Committee on Arrangements.
4. Business which requires early consideration.
5. Annual Reports of—
   a. Treasurer and Librarian.
   b. Secretary.
6. Reports of Standing Committees—
   a. Committee on Admissions and Medical Societies.
   b. Committee on Finance.
   c. Committee on Publication.
   d. Committee on Legislation.
   e. Committee on Ethics.
7. Reports of Special Committees.
8. Appointment of Committee on Nominations.
9. Papers—
   a. "Home Treatment of Paroxysmal Inebriety," by Dr. L. B. Tuckerman, Cleveland, Ohio.
   b. "The Uses of Alcohol in the Treatment of Disease," Dr. J. P. Baker, Findlay, O.
   c. "Treatment of Acute Oedema of the Larynx," Dr. Auguste Rhu, Marion, O.
   d. "Herpes of the Buccal Mucous Membrane," Dr. J. E. Boylan, Cincinnati, O.

Evening Session.

1. Gymnasium Exhibition, Dr. A. T. Halstead, Cincinnati, O. This exhibition will be given in the Y. M. C. A. Gymnasium, at 7:30.
2. Papers, at 8:30.
   a. "The Doctor's Hands," Dr. Dan Millikin, Hamilton, O.
   b. "Music in Medicine," Dr. C. H. Merz, Sandusky, O.
   c. "Medical Education," Dr. J. H. Calvin, Huron, O.
   d. "The Battle with Germs," Dr. Julia W. Carpenter, Cincinnati, O.
   e. "Indigestion," Dr. W. T. Barnes, Fredricksburg, O.

Thursday, May 5—Morning Session.

1. Surgical Clinics, 8:30 to 10:30 A.M., Cincinnati Hospital, Free Surgical for Women, German Hospital.
2. Papers—
   a. "Meckel's Diverticulum as a Cause of Intestinal Obstruction," Dr. Dudley P. Allyn, Cleveland, O.
   b. "Report of Abdominal Surgery for 1891," Dr. C. A. Kirkley, Toledo, O.
   c. "A Report of Abdominal Operations," Dr. T. Dod Gilliam, Columbus, O.
   d. "Aseptic Gangrene," Dr. C. B. Parker, Cleveland, O.
   e. "The Radical Operation for Varicocele, with Report of Twelve Cases," Dr. B. Merrill Ricketts, Cincinnati, Ohio.
   f. "Injuries of the Shoulder," Dr. F. Griswold, Sharon, O.
   g. "Rupture of the Diaphragm, an Experimental Study," Dr. G. W. Crile, Cleveland, O.

Afternoon Session.

1. Report of committees.
2. Election of officers.
3. Selection of a place for the next meeting.
4. President's Address, Dr. G. A. Collamore, Toledo, O.
5. Papers:
   a. "The Surgery of the Prostate," Dr. P. S. Conner, Cincinnati, O.
   b. "The Treatment of Certain Forms of Club Foot," Dr. W. E. Wirt, Cleveland, O.
   c. "The Infant's Prepuce," Dr. C. N. Smith, Toledo, O.
   d. "External Urethrotomy for Stricture," Dr. J. A. Hobson, Flushing, O.
   e. "Intubation *versus* Tracheotomy," Dr .Thomas Hubbard, Toledo, O.

author's extreme dogmatism is strongly reminiscent of another most able exponent of English gynecology. In the matter of tubal pregnancy, the author joins hands with Tait in tearing down the older pathological ideas. The book is handsomely illustrated, most of the views being new.

The Diseases of the Mouth in Children, by F. Forchheimer, M.D., Professor of Physiology and Clinical Diseases of Children, Medical College of Ohio. Philadelphia: J. B. Lippincott Company, 1892.

The author divides the non-surgical diseases of the mouth as follows: Stomatitis catarrhalis; stomatitis aphthosa; stomatitis mycosa; stomatitis ulcerosa; stomatitis gangrenosa; stomatitis crouposa-diphtheritica; stomatitis syphilitica.

The chapter on aphthous stomatitis is particularly valuable. The term has been used in such widely different senses by different writers, that a strong, authoritative definition and exposition of it, has become most desirable. Dr. Forchheimer separates this disease most clearly and satisfactorily from the other diseases of the mouth, and as his classification includes all of the non-surgical diseases of the mouth, he gives to this much abused term a definite meaning, which it has long needed.

Stomatitis ulcerosa is a disease which has long attracted the attention of pædiatricians and the exposition which it has received in this book can not fail to be most gratifying to those familiar with the subject. The clear elucidation of the earlier stages of this affection is particularly valuable.

The chapter on dentition is the one which will attract the most attention. The author has not failed in times gone by to clearly express his views on this subject, and all familiar with his writings are not surprised to find him dealing a heavy blow at the popular idea of the pathology of dentition. Dr. Forchheimer does not believe that dentition is responsible for any of the manifold evils that are usually attributed to it, and this chapter is a particularly strong argument for these views. It must be borne in mind that these are the views of a man who has for years concerned himself in the clinical observation of sick children, who has thoroughly familiarized himself with all the means of diagnosis in infancy, and his views will therefore be given great weight. It is certainly true that "teething" is a convenient diagnosis; it is always acceptable to the laity, but it usually is a substitute for the correct diagnosis, which could have been made, had the practitioner been more thoroughly familiar with the pathology and clinical manifestations of infancy.

Whether one agrees wholly with the author or not upon this subject, it cannot be denied but that the doctrine of "teething" has been much overdone, and that many deaths have resulted from belief in this doctrine, which could have been avoided. The influence of dentition in the production of disease in infants is certainly so small that better results will follow if it be ignored entirely. It is high time to start a crusade against the teething doctrine.

The Pocket Pharmacy, by John Aulde, M.D. New York: D. Appleton & Co., 1892.

In this work Dr. Aulde shows the clinical uses of twenty-four different remedies. These remedies are all prepared in pill or tablet form, and constitute a suitable outfit for a small pocket case.

Under each drug appears alphabetically a list of the conditions in which it may be prescribed, and with each topic, short but accurate directions for the particular use of the drug. The author is an advocate of small doses frequently repeated. By a careful study of this small book, and by providing himself with the necessary outfit, there is no doubt but that the practitioner would be benefited.

The *Medical Press and Circular.*—This venerable English journal of date of March 30, has just arrived, printed throughout in new type, so clean-cut and well-set that it is a pleasure to take up the articles in every department, and read them. Even the advertisements, for the most part, are set in this spick and span new dress. The paper is of a creamy tint, restful to the eyes. Taken as a whole, *The Press and Circular* might serve some of our slovenly-looking contemporaries as an example of the effects of brains and neatness when mixed with printers' ink.

MISCELLANY.

In our last issue on page 536 Dr. Wm. F. Hutchinson was referred to as formerly of Providence. The Doctor is still of Providence and has no thought of any other home.

Association of Medical Superintendents of American Institutions for the Insane.—The Forty-sixth Annual Meeting of this Association will be held at Washington, D. C., May 3, 4, 5, and 6, 1892. at the Arlington hotel.

Tuesday, May 3, 1892.

11 A.M.—Calling to order; Address of Welcome; Appointment of Committees; Recess; Election of Officers; President's Annual Address; Adjournment.

3 P.M.—Discussion: "The Surgical Treatment of Insanity, Epilepsy, etc." G. A. Blumer, M.D., Utica, N. Y., Chas. G. Wagner, M.D., Binghamton, N. Y., Howard A. Kelly, M.D., Prof. of Gynecology, Johns Hopkins Hospital, Baltimore, Md., Geo. H. Rohe, M.D., Catonsville, Md., Chas. A. L. Reed, M.D., Professor of Gynecology, Cincinnati College of Medicine, Cincinnati, O., Alex. J. C. Skene, M.D., Gynecologist to the King's County Asylum, N. Y., Professor Gynecology, Long Island College Hospital, Brooklyn, N. Y.

8 P.M.—"Results from the Study of the Brain of Laura Bridgman." By H. H. Donaldson, M.D., Professor of Neurology, Clark University, Worcester, Mass.

"Mechanical Restraint—A Valuable Aid in the Treatment of the Insane." By H. N. Rucker, M.D., Stockton, Cal.

"What is Restraint?" By C. E. Wright, M.D., Indianapolis, Ind.

Wednesday, May 4.

10:30 A. M.—Unfinished Business; Reports of Committees, etc.; Report on Manual Autopsies; Suggestions for meeting of 1893.

Discussion: "Improved Methods of Caring for the Insane."

John B. Chapin, M.D., Philadelphia, Pa.—General Suggestions; Increased Attention to Acute Cases; The Cultivation of the Hospital Idea.

Benjamin Blackford, M.D., Staunton, Va.—Economy in Hospital Building, Description of New Buildings at Staunton; Economical Use of Patients' Work in Conjunction with the Organized Labor of the Institution.

Richard Dewey, M.D., Kankakee, Ill.—Employment.

Henry M. Bannister, M. D., Kankakee, Ill.—Therapeutics.

No session will be held in the afternoon. The time will be devoted to an Excursion in carriages to the Soldiers' Home.

8:30 to 11 P.M.

Social Reunion. Reception by the President of the Association. Parlors of the Arlington Hotel.

Thursday, May 5.

10:30 A.M.—Report on Reorganization.

"Separate Provision fo Epileptics, both Public and Private." By Henry R. Steadman, M.D., Roslindale, Mass.

A plea for special and separate care of Epileptics in institutions on the cottage plan exclusively for that class. Their removal from almshouses and asylums for reasons which are obvious, will be urged. A description of Foreign Epileptic colonies will be given, as well as other means usual and unusual for the cure of Epileptics. The probable number of Epileptics at large will be given, and the especial need of a refuge for such cases, to whom only the almshouse and the asylum are now open. The disadvantage of their intermixture with the insane, to both classes, and the movement taking place in this direction and its progress in different States will be touched upon.

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"Sexual Vices—Their Relation to Insanity, Causative or Consequent." By R. J. Preston, M.D., Marion, Va.

Report of committee on time and place of next meeting.

Adjournment.

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The meeting will be called to order on Tuesday morning at 10 o'clock, in the G. A. R. Hall.

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Committees: Arrangements: Francis B. Haller, Vandalia; Moses Haynes; J. H. Miller; R. T. Higgins; Geo. A. Martin. Publication: David W. Graham, Chicago; Nathan S. Davis, Jr., Chicago; George N. Krieder, Springfield. Medical Legislation: Frederick C. Schaefer, Chicago; B. M. Griffith, Springfield; Francis B. Haller, Vandalia; Thomas M. McIlvaine, Peoria; Geo. R. Cowan, Girard. Legislation for the Insane: Ephraim Ingals, Chicago; Richard Dewey, Kankakee; John P. Mathews, Carlinville; Edgar P. Cook, Mendota; Charles W. Earle, Chicago. Necrology: Ephraim Ingals, Chicago; Robert Boal, Peoria; John H. Rauch, Springfield. Biography: John H. Hollister, Chicago.

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3. Members desiring to read papers should notify the officers of the appropriate Sections at once.

4. A detailed programme will be issued and mailed to members before the meeting.

5. Delegates to the American Medical Association, which meets in Detroit, June 7, will be appointed at this meeting.

D. W. Graham, Permanent Secretary.

Ohio State Medical Society.—Forty-seventh annual meeting at Cincinnati, Ohio, May 4, 5, and 6, 1892.

First Session—Wednesday, May 4.

1. Call to order.
2. Prayer.
3. Report of Committee on Arrangements.
4. Business which requires early consideration.
5. Annual Reports of—
   a. Treasurer and Librarian.
   b. Secretary.
6. Reports of Standing Committees—
   a. Committee on Admissions and Medical Societies.
   b. Committee on Finance.
   c. Committee on Publication.
   d. Committee on Legislation.
   e. Committee on Ethics.
7. Reports of Special Committees.
8. Appointment of Committee on Nominations.
9. Papers—
   a. "Home Treatment of Paroxysmal Inebriety," by Dr. L. B. Tuckerman, Cleveland, Ohio.
   b. "The Uses of Alcohol in the Treatment of Disease," Dr. J. P. Baker, Findlay, O.
   c. "Treatment of Acute Oedema of the Larynx," Dr. Auguste Rhu, Marion, O.
   d. "Herpes of the Buccal Mucous Membrane," Dr. J. E. Boylan, Cincinnati, O.

Evening Session.

1. Gymnasium Exhibition, Dr. A. T. Halstead, Cincinnati, O. This exhibition will be given in the Y. M. C. A. Gymnasium, at 7:30.
2. Papers, at 8:30.
   a. "The Doctor's Hands," Dr. Dan Millikin, Hamilton, O.
   b. "Music in Medicine," Dr. C. H. Merz, Sandusky, O.
   c. "Medical Education," Dr. J. H. Calvin, Huron, O.
   d. "The Battle with Germs," Dr. Julia W. Carpenter, Cincinnati, O.
   e. "Indigestion," Dr. W. T. Barnes, Fredricksburg, O.

Thursday, May 5—Morning Session.

1. Surgical Clinics, 8:30 to 10:30 a.m., Cincinnati Hospital, Free Surgical for Women, German Hospital.
2. Papers—
   a. "Meckel's Diverticulum as a Cause of Intestinal Obstruction," Dr. Dudley P. Allyn, Cleveland, O.
   b. "Report of Abdominal Surgery for 1891," Dr. C. A. Kirkley, Toledo, O.
   c. "A Report of Abdominal Operations," Dr. T. Dod Gilliam, Columbus, O.
   d. "Aseptic Gangrene," Dr. C. B. Parker, Cleveland, O.
   e. "The Radical Operation for Varicocele, with Report of Twelve Cases," Dr. B. Merrill Ricketts, Cincinnati, Ohio.
   f. "Injuries of the Shoulder," Dr. F. Griswold, Sharon, O.
   g. "Rupture of the Diaphragm, an Experimental Study," Dr. G. W. Crile, Cleveland, O.

Afternoon Session.

1. Report of committees.
2. Election of officers.
3. Selection of a place for the next meeting.
4. President's Address, Dr. G. A. Collamore, Toledo, O.
5. Papers:
   a. "The Surgery of the Prostate," Dr. P. S. Conner, Cincinnati, O.
   b. "The Treatment of Certain Forms of Club Foot," Dr. W. E. Wirt, Cleveland, O.
   c. "The Infant's Prepuce," Dr. C. N. Smith, Toledo, O.
   d. "External Urethrotomy for Stricture," Dr. J. A. Hobson, Flushing, O.
   e. "Intubation *versus* Tracheotomy," Dr .Thomas Hubbard, Toledo, O.

f. "Appendicitis," Dr. J. A. McGlenn, Mt. Pleasant, O.
g. "A Contribution to the Operative Treatment of Chronic Catarrhal Appendicitis," Dr. R. Harvey Reed, Mansfield, O.
h. "Rupture of Uterus in Early Months of Pregnancy, with Report of Case," Dr. H. B. Gibbon, Tiffin, O.
i. "The Modern Cæsarean Section, How and When Performed." Illustrated by Drawings and Manikin, Dr. E. Gustav Zinke, Cincinnati, O.
j. "Galvanism in Fibroid Tumors of the Uterus, with Report of Cases," Dr. T. M. Wright, Troy, O.

Evening Session.
Reception at the Burnet House, 8:30.
Friday, May 6—Morning Session.
1. Surgical Clinics, 8:30 to 10:30 a.m.: Cincinnati Hospital, Free Surgical for Women, German Hospital.
2. Reports of committees.
3. Papers:
   a. "Methylene Blue and Methylene Violet," Dr. Jas. T. Whittaker, Cincinnati, O.
   b. "Can Scarlet Fever be Aborted?" Dr. J. C. Crossland, Zanesville, O.
   c. "Forced Respiration, with Report of its Use in Nine Cases," Dr. C. R. Vanderburg, Columbus, O.
   d. "Acute Rhinitis, with Retention of the Secretion," Dr. C. E. Perkins, Sandusky, O.
   e. "Medical Properties of Bromo-Lithia Water," Dr. W. A. Dixon, Ripley, O.
   f. "Treatment of Enteric Fever," Dr. C. L. Ward, Cridersville, O.
   g. "The Rational Treatment of Typhoid Fever," Dr. F. W. Langdon, Cincinnati, O.
   h. "The Pathological Anatomy of Speech Disturbances," Dr. A. B. Richardson, Cincinnati, O.
   i. "Some Points in the Symptomatology of General Paresis," Dr. Philip Zenner, Cincinnati, O.
   j. "Intestinal Tuberculosis," Dr. S. P. Kramer, Cincinnati, O.

Afternoon Session.
1. Reports of committees.
2. Papers:
   a. "The Use of the Galvano-Cautery in Ophthalmic and Laryngeal Surgery," Dr. R. D. Gibson, Youngstown, O.
   b. "The Relation of Frrors of Refraction to Chronic Diseases of the Eyelids," Dr. D. DeBeck, Cincinnati, O.
   c. "Radical Cure of Hernia by the Use of the Buried Antiseptic Animal Suture, with Report of Additional Cases," Dr. F. C. Larimore, Mt. Vernon, O.
   d. "Sepsis, with a Narration of a few Interesting and Instructive Cases," Dr. Robert Peter, Canal Dover, Ohio.
   e. "What are the Cardinal Points in the Treatment of Chronic Catarrhal Endo-cervicitis and Endometritis?" Dr. A. F. House, Cleveland, O.
   f. "Present Status of Gynecology," Dr. C. D. Palmer, Cincinnati, O.
   g. "Tuberculosis of Bone," Dr. N. P. Dandridge, Cincinnati, O.
   h. "Treatment of Orchitis and Epididymitis," Dr. O. Hasencamp, Toledo, O.
   i. "Ichthyol in Eczema," Dr. A. Ravogli, Cincinnati, O.
   j. Volunteer Papers.
3. Oral Communications.
4. New Business.
3. Unfinished and Miscellaneous Business.

The sessions will be held in the Y. M. C. A. Building, Corner Seventh and Walnut Sts.

T. V. Fitzpatrick, Sec'y.

The following named distinguished gentlemen have been delegated to represent the British Gynecological Society at the International Congress of Gynecology and Obstetrics, next September:

Robert Barnes, Granville Bantock, Lawson Tait.

Great preparations are being made to entertain visiting physicians. His Majesty, King Leopold, will assist at the opening of the Congress. There will be a grand reception by the Belgian Gynecological Society; gala performance at the Grand Opera; also a banquet by the Belgian Gynecological Society; garden party in the gardens of the Royal Family, etc.

For all information relating to the Congress address, Dr. F. Henrotin, American Secretary, 353 La Salle Ave., Chicago, Ill.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 16, 1892, to April 22, 1892.

First Lieut. Ogden Rafferty, Asst. Surgeon U. S. A., is granted leave of absence for one month, to take effect on or about May 1, 1892.

First Lieut. George M. Wells, Asst. Surgeon U. S. A., is relieved from duty at San Carlos, Ariz., and ordered to report in person to the commanding officer, Ft. Grant, Ariz., for duty at that station.

By direction of the Secretary of War, Par. 13, S. O. 74, A. G. O.. March 29, 1892, removing the suspension of the orders changing the stations of Capt. Aaron H. Appel and First Lieut. Julian M. Cabell, Asst. Surgeons U. S. A., is revoked.

Major John H. Janeway, Surgeon U. S. A., is relieved from the further application of so much of special orders as directs him, in addition to his other duties, to perform the duties of post surgeon at Frankford Arsenal, Penn.

Capt. Augustus A. De Loffre, Asst. Surgeon U. S. A., is granted leave of absence for fourteen days, on surgeon's certificate of disability, with authority to enter Army and Navy General Hospital, Hot Springs, Ark., for treatment.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending April 16, 1892.

Surgeon P. H. Bailhache, granted leave of absence for seven days. March 29, 1892.

Surgeon George Purviance, detailed as chairman of Board for physical examination of officer, Revenue Marine Service. March 30, 1892.

Surgeon J. B. Hamilton, detailed as chairman of Board for physical examination of surfman, Life Saving Service. March 31, 1892.

Surgeon John Godfrey, detailed as inspector of immigrants, port of New York. April 14, 1892.

Surgeon F. W. Mead, detailed as chairman of Board for physical examination of officers of Revenue Marine Service. April 16, 1892.

P. A. Surgeon C. E. Banks, ordered to examination for promotion. April 14, 1892.

P. A. Surgeon D. A. Carmichael, when relieved at Port Townsend, Wash., to proceed to San Francisco Quarantine for duty. April 8, 1892.

P. A. Surgeon W. P. McIntosh, when relieved at San Francisco Quarantine, to proceed to New Orleans, La., for duty. April 8, 1892.

P. A. Surgeon W. J. Pettus, granted leave of absence for thirty days. April 12, 1892.

P. A. Surgeon G. M. Magruder, when relieved at Portland, Ore., to proceed to Port Townsend, Wash., for duty. April 8, 1892.

P. A. Surgeon J. J. Kinyoun, detailed as chairman of Board for physical examination of candidates and officers, Revenue Marine Service. March 30, 1892. Detailed as recorder of Board for physical examination of officers, Revenue Marine Service. April 16, 1892.

P. A. Surgeon G. T. Vaughan, detailed as recorder of Board for physical examination of candidates and officers, Revenue Marine Service. March 30, 1892.

Asst. Surgeon H. D. Geddings, ordered to examination for promotion. March 29, 1892.

Asst. Surgeon C. P. Wertenbaker, detailed as recorder of Board for physical examination of surfman, Life Saving Service. March 31, 1892. Ordered to examination for promotion. April 5, 1892.

Asst. Surgeon J. C. Perry, to proceed to Gulf Quarantine for temporary duty. April 9, 1892.

Asst. Surgeon G. B. Young, when relieved at St. Louis, Mo., to proceed to Portland, Ore., for duty. April 8, 1892.

Asst. Surgeon W. G. Stimpson, detailed as recorder of Board for physical examination of officer, Revenue Marine Service. March 30, 1892.

Asst. Surgeon B. W. Brown, detailed as chairman of Board for physical examination of officer, Revenue Marine Service. April 1, 1892. To proceed to Port Townsend, Wash., for temporary duty. April 8, 1892.

Asst. Surgeon M. J. Rosenau, when relieved at New Orleans, La., to proceed to St. Louis, Mo., for duty. April 8, 1892.

Asst. Surgeon L. E. Cofer, to proceed to Buffalo, N. Y., for temporary duty. April 8, 1892.

Asst. Surgeon J. M. Eager, to proceed to Gallipolis, O., for temporary duty. April 8, 1892.

Asst. Surgeon C. H. Gardner, to proceed to San Francisco, Cal., for temporary duty. April 8, 1892.

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ORIGINAL ARTICLES.

THE ESOTERIC BEAUTY AND UTILITY OF THE MICROSCOPE.

BY EPHRAIM CUTTER, LL.D., M.D.,
OF NEW YORK.

From the Microscope, January, February and March, 1892.
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Three things prompt the writing of this paper:

1. It is the tri-centennial of the microscope.

2. It has been stated that not much has been done with the microscope in America (1891).

3. At a meeting of the Presbyterian Club of New York, a few years ago, a divine repeatedly alluded to the "accursed microscope." This man represented himself. It is a libel on his church to think such a hing. It is a patron of science, microscopy included.

Now the writer feels that he owes a debt of gratiude to the Dutch for inventing the microscope—hat America has done and is doing something with the microscope of great practical value, and that things of beauty and utility should not be called *acursed*. Hence he begs to testify what he knows in his own practical, every-day experience. While givng due credit to others, he holds himself only responsible for what is here asserted, like a witness in court. The term esoteric is used to express the inwardness of this beauty and utility as a matter of fact, in the hope that they may become exoteric, and benefit others as much as they have the writer. The beauty is that grace and feature of excellence of the microscope that pleases the mind as a *means to an end.* The microscope is not an end. It is a great mistake to think it is an end.

The Microscope in Disease.—I use it to examine the blood, sputum, fæces, urine, skin, secretions of eyes, ears, nose and glands, and vomitus.

This morphological examination does not exclude other physical exploration or chemical examination. It supplements them, and with them forms a most valuable basis for the detection and treatment of pathological conditions.

For the sake of brevity, please let *Morph. A* = The morphology of the blood.[1] *Morph. B* = The morphology of the sputum, which may include all discharges from the air passages, which are expectorated through the mouth. *Morph. C* = The morphology of the secretions and other objects found with the use of the microscope on the skin, specially in the sweat and dirt. *Morph. D* = The morphology of the fæces. *Morph. E* = The morphology of the urine. *Morph. F* = The morphology of the milk. *Morph. G* = The morphology of the secretion of the eyes. *Morph. H* = Morphology of the secretion of the ears. *Morph. I* = Morphology of the secretion of the nose.

Consumption—Phthisis Pulmonalis. Morphs. A, B, D, E.—The microscope is a means to the following ends in the diagnosis of: 1. The pre-tubercular state any time within a year before the lungs break down, which forms tubercular. 2. The tubercular state. 3. To distinguish between consumption of the lungs and bowels. 4. Between consumption and bronchitis and asthma. 5. Fibrous consumption. 6. Consumption of the blood. 7. Between consumption and uterine disease. 8. Bright's disease of the lungs. 9. Consumption in cases of life insurance. 10. To know how the patient gets on under treatment. 11. To know when to add to or restrict diet. 12. To know when the patient is cured.

Remarks.—Sometimes, to distinguish elastic or inelastic lung fibres in the sputum, the polariscope must be used, as cotton, linen or woolly fibre may be changed by the action of the sputum so as to closely resemble the lung fibres, which do not polarize light. No real progress to health is made in any case before the normal morphologies take the place of *Morph. A, B, D, E.* The microscope alone reveals these, hence what a useful and beautiful thing it is to settle so many points that are a great trouble to physicians. To give an idea here of these abnormal morphologies would take too much time and space. Indeed, they are best taught by practical lessons from some one who understands them. These ideas are not wholly original with the writer. They are American, and have been in use for many years. The writer reported at the Tenth International Medical Congress, Berlin, one hundred cases of consumption; forty of them were cures, mostly of ten years' standing; some of twenty-five years. The treatment has been published in the Trans. Am. Med. Association, 1880. From these we infer that the Netherlands are to be much honored for the discovery of the microscope, that something grand has been done in America with the microscope, and that if 40 per cent. have been saved by using the microscope, it is not an "accursed" instrument. N. B.—These one hundred cases do not comprise all of my cases in consumption.

Rheumatism. Morph. A, E, C.—The microscope shows this to be a disease of the blood first, and next of the fibrous and cartilaginous tissues. Some call it a "gravel of the blood." Without the microscope no certain diagnosis can be made; with it the following varieties may be generally made out: 1. Cystinic. 2. Oxalic. 3. Phosphatic. 4. Uric. 5. Hippuric (rare). Besides these are enlarged and thickened fibrin filaments; thrombi, which may become emboli; adhesive and plastic red blood corpuscles, deprived of their covering of neurine, and thus clotting into firm ridges, rows and masses, like crowded and frightened sheep. These conditions usually are latent for a longer or shorter time, and are brought out by some secondary cause, as exposure to cold and wet. The gun is loaded before it can be fired off by the explosion of the cap. I have found the blood morphology of rheumatism valuable in differentiating other diseases. For example, most people call fugitive and wandering pains rheumatism, and make out their own diagnosis for the doctor beforehand. But they do not know that other complaints will cause such pains also. So, when a woman complains thus, and does not have the morphology of rheumatic blood, the cause will often be found to be local. When a man complains thus without the morphology of rheumatic blood, the microscope has traced it to neurasthenia from catarrh of the urinary tract.

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[1] See Clinical Morphologies—E. Cutter. They are too long to introduce here.

Another significant practical point found in rheumatism, is that there is generally an enlargement of the heart. The microscope shows that it is due to the adhesive condition of the red blood corpuscles, to the strong and more numerous fibrin filaments and skeins, to the blood crystals, and to the minute clots that are found in rheumatic blood.

When it is considered that the capillary circulation goes on in tubes $\frac{1}{3000}$ inch in diameter, it stands to reason that it would take more force to drive the blood with rheumatic morphology than when it is normal, with the red blood corpuscles clean-cut, distinct and covered with neurine so that they do not adhere to each other or the walls of the vascular system, and thus enter and pass through the capillaries with facility and ease. The increased force needed to drive the blood demands an increased amount of muscular tissue in the heart, just as the muscles of the blacksmith and athlete increase, and so comes the cardiac hypertrophy.

In such cases it is remarkable how readily the heart will resume its normal size when the morphology of the blood is restored to normality by treatment, and thus the microscope is a thing of beauty and utility in the handling of rheumatism and heart disease.

Pre-embolic State.—I have found the microscope to reveal the fibrinosis of embolism. For embolism is merely a plug of fibrin filaments or skeins stopping up an artery.

I have been able to avert this condition in childbirth by the use of the microscope.

Is not this worth some gratitude?

Blood diseases, such as leucocythæmia, malaria, erysipelas, boils, carbuncles; these I cannot understand without the use of the microscope.

Asthma and Hay Fever I find are explained by *Morph. B.* They are essentially a gravel of the lungs and nares. Epidemic influenza or infusorial catarrh is made to me a practical business matter by the use of the microscope. Bright's disease of the kidneys cannot be made out unless *Morph. E.* shows the casts of the kidney tubes and fatty epithelium, besides the macroscopic albumin. Neurasthenia in men is satisfactorily explained by the use of the microscope, showing catarrhal discharges in one of three forms: 1, Protoplasmic; 2, Skeins; 3, Indian-club shaped. Sometimes these forms are mingled together. A one inch objective is the best for this determination.

Diagnosis of cancer.—Diagnosis of healthy milk used as food. This is not easy.—*Trichinous muscular tissues.*—Eggs of intestinal worms in fæces.—Parasites, as itch insects, harvest mites, etc.—Diagnosis of ovarian cysts from fibro-cysts.—I find the morphology of the fæces gives indispensable information as to the food the patient has eaten; the character of his digestion, the amount of intestinal fermentation, the ability of the organs of digestion to do their work; shows the presence of tape and other worms, and is, with polarized light, a source of some of the finest microscopical exhibitions. Thus making the most repulsive and disagreeable objects in Nature æsthetically agreeable and attractive, certainly shows great transforming powers in the microscope. Reference is here made to the beautiful dissections of vegetable tissues found in the fæces. The same remark applies to the morphology of the sputum in a limited measure. Beauty is found in the ruins of the lungs.

The morphology of the air, which surgeons should study, has been very instructive to me. Malaria (or bad air) in *Morph. B.* has been a clear subject since this has been studied.

Morphology of dirt as found in and on the human body I have found very instructive in my business. Prof. Reinsch discovered vegetation on the surface of the coins used as money, and I have found the same in the dirt under the finger nails of my own hands. The late lamented Dr. Louis Elsberg coöperated in this study.

Morphology of Hydrant Drinking Waters.—Having studied the morphology of the hydrant water of over thirty cities and towns, I was called in court as an expert on a water privilege case. I was able to prove that the water was taken from the miller's supply, which had been denied. I am glad to know that the Massachusetts State Board of Health is paying attention to this subject of so great sanitary importance.

Morphology of food I find is a most interesting subject. It shows the changes produced by the various operations of cooking, which is connected with things which are supposed to be thoroughly understood because they come so closely in contact with the human body constantly ever since man came into the world. Foods are easily had, and easy to examine. Polarization shows how well the food is cooked, as starch and red muscular fibre do not polarize light when cooked, and of course when partly cooked, partly polarize light. Potatoes, beans, leavened and unleavened bread, crackers, dough, etc., are fine objects to study. There is no doubt that a great deal of sickness comes from imperfectly cooked food. I find the microscope an excellent means to tell what foods are bad for my patients, by studying the *Morphologies A, D, E.* Strawberries, for example, are poor food. This is a large, new and interesting field of study. I hope microscopists will cultivate this field more and bring out as good results as Dr. Taylor, of the U. S. Agricultural Department, has done with butters, true and false.

Morphologies of Invalids' and Infants' Food, Cereals Especially.—This division comes almost under the heading of adulteration of foods, so little do the advertised statements as to their character come up to their own demands. They are not adulterated, but wrongly described. I have tried to protect invalids and infants, with little success so far as I can learn. The microscopists who have this class of individuals in their families cannot afford not to examine their food, and protect the helpless ones from harm if not imposition. Of course this morphological examination should be supplemented by the chemical and physiological examinations. All have a right to examine their food as far as possible macroscopically, but the microscopical examination will acquaint the inquirer with the facts very much more satisfactorily.

Morphology of Adulteration in Foods is a large one and has been made the subject of a volume by Hassall. There is great need that this examination be kept up, as these admixtures are so common everywhere. When microscopy becomes as common as music and is used as much, then the queens of our parlors will vie with the queens of our kitchens in securing pure, not "strictly," "absolutely" and fully "warranted" pure foods.

Morphology of Drugs in Powders, Extracts, Substance Crystals, Oils, etc.—I have not cultivated this department as much as I would like to, but I see here a large field for the use of the microscope as a means to the end of uniform and genuine preparations.

Morphology of Wearing Apparel.—I have found the use of the microscope to be of much avail in selecting silk patterns for dresses and clothing for my family. The time is coming when the microscope will detect the germs of diseases in infected clothing. It has come.

Some years ago the ladies of Boston held a fair to buy the old South church. A party in charge of one department perpetrated some frauds and erased as far as possible by friction the lead penciled items entered in the department memorandum book. I was able by low powers to reproduce nearly all the erasures, much to the delight of the ladies.

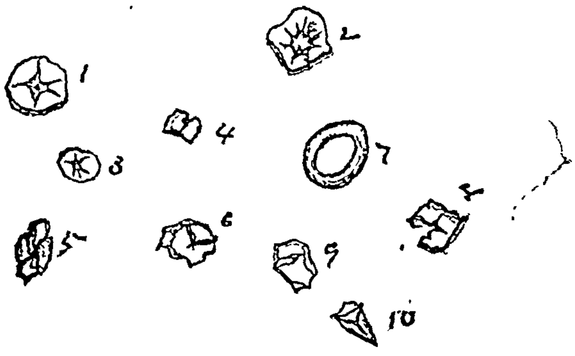
This syllabus, though incomplete, is enough to show that the demand of microscopy in pleasure and business is one that commands the respect of thoughtful minds, and should be extended to embrace thousands where it does now one individual, for it is an instrument of precision capable of great good to all.

THE MORPHOLOGY OF RHEUMATIC BLOOD.

It is not intended to make this paper exhaustive, but to point out the prominent features. This corroborates the Salisbury paper in the American Journal Medical Sciences, Philadelphia, Oct., 1867.

Examination immediate, not mediate.—1. Collection. Specimens must be removed from blood stream as quickly as possible. The patient should be present and the blood should be examined directly, with no loss of time. This is particularly insisted on, as there is a general impression that blood can be collected by anyone and kept almost any time before examination. Mistakes have come from this misapprehension. 2. Kind of blood collected; capillary, not venous, nor arterial. 3. Site of collection.—The forearm, near the wrist. With some persons the fingertip is a favorite place for collecting blood, but the fat and dirt found there are objections, to say nothing of the needless pain of nerve papillæ puncture. If dirty, the forearm should be washed with soap and water, or ammonia and water, and rubbed dry with a clean towel previous to puncture. 4. Instrument for collecting the blood. Codman and Shurtleff, Boston, Mass., prepared the writer's scarificator, that can be buried to the depth desired with a single sudden painless motion. It is desirable to obtain no more nor no less blood than is sufficient to fill the space between an ordinary cover glass and slide. This amount is a drop about one-eighth of an inch in diameter. By thus preserving a uniformity in the size of the drop of blood as near as is possible, one can form an approximate judgment of the comparative number of corpuscles in different specimens, and the relative proportion of the serum to red and white corpuscles and of the red and white to each other. Best to clean the scarificator point by driving it into a clean towel after each use. 5. How to get the blood. Having the forearm and the instruments ready, the observer grasps the wrist with the left hand so that the skin is drawn tense; the scarificator in the right hand of the observer is applied to the radial or ulnar edge, whichever is held uppermost, avoiding veins, and the point is entered by approximating the thumb and fingers holding the scarificator. The point then pierces the skin so quickly as hardly to be felt, and if the capillary circulation is good, the cut fills with blood and exudes. Usually the sluggish circulation requires a squeezing of the cut to make the drop exude. A clean scalpel is then used to scrape off the blood and to transfer it to the slide, or the slide can be touched to the drop directly, when it is immediately covered and transferred to the stage of the microscope, previously prepared. 6. Power employed. Objectives, $\frac{1}{4}$ to $\frac{1}{18}$ inch; eyepieces, 2 or 1 inch. The writer uses Tolles'.

What to look for in rheumatic blood. 1. Red corpuscles, color, form, plasticity, adhesiveness. In rheumatism they are generally sticky and adhesive, outlines winged, huddling together in ridges or irregular masses like frightened sheep in a fold ready for shearing. They act as if their covering of neurine was removed, hence they travel with friction through the blood vessels and adhere together. 2. White corpuscles. They are apt to be too numerous, enlarged in size and filled with granules, which may or may not be salts in granular form, as the blood in rheumatism contains more saline bodies than normal. They also adhere to each other or foreign bodies and are found in thrombi and emboli. 3. Serum. After the blood has been a short time on the stage the serum will become filled with: (A). Fibrin filaments in network in the small meshes and strong threads, while in healthy blood the meshes are large and the threads so subtile and minute as almost to elude observation, like the outside hyaline carapace of a *Stephanoceros*. These same small meshes and strong-threaded fibrin filaments are seen in consumptive blood, and are due to a rheumatic complication. (B). Fibrin filaments in larger threads, ribbons and skeins. These are very marked at times in size and length. They oftentimes form skeins of considerable size and length. When long and narrow they will run through two or more fields of the microscope. Often they are of such transparency as to be almost overlooked, but usually they are of a white color, appearing like strings of fibrin in the blood, which they really are. When the red corpuscles crowd around them as crystals of sugar about a string in syrup, and a ridge is seen of unusual prominence, length, twists and curves, then a curl of fibrin filaments is usually found to be the basis of the configuration. Sometimes the skeins are inextricably coiled and curled up. Sometimes they are free like a lock of combed hair. Sometimes the skeins are very numerous, in which case embolism is to be feared. Sometimes they are few and isolated. Their unevenness and transparent snowy whiteness are usually enough to diagnosticate them from the mycelial filaments found in the blood, and which belong to the vegetable kingdom. They are found during pregnancy, and I have no doubt become a serious complication in some cases. Nature will clear them out of the blood if she has a chance to do it. (C). Fibrin filaments in thrombi that become emboli. These are found simple, when you can readily trace the filament curled up on itself many times and retaining its cylindrical character. Or the mass is made up of the filaments with their bloody substance melted or fused together so that all trace of the filaments is lost, as in mother of vinegar, or embracing within their substance red and white corpuscles, crystals either entire or fractured, one or all. At times they are very large comparatively, and are probably formed by mechanical accumulation on the periphery of other fibrin filaments, or form elements encountered in the blood stream, as a snow ball grows by rolling in the snow. The presence of such bodies in the blood stream sufficiently explains the formation of fibrinous concretions on the valves of the heart or amongst its columnæ carneæ. Sometimes they are very large. For example, in the heart of the late Dr. Benjamin Cutter, the father of the writer, two fibrinous concretions were found each measuring eight inches in length. One originated among the columnæ carneæ of the left ventricle and extended into the aorta; the other arose among the columnæ carneæ of the right ventricle and extended into the pulmonary artery! It is easy to understand local swellings about joints and other parts of the body when such thrombi or clots become emboli or plugs in the adjacent blood vessels. When such are found in the blood of a patient there is need of immediate treatment, for sudden and otherwise mysterious deaths have been traced back to embolism. So if any proof of the value of the microscope in physical exploration was needed, this instance would serve and show that it is not a mere toy. This is not a paper on treatment, but it may be in order to here intimate that ammonia baths, and one pint of hot water flavored with the aromatic spirits of ammonia drank one hour before each meal and on retiring to bed, with medicines addressed to putting the liver, skin, kidneys and other emunctories in good condition, and regulation of diet will soon remove such thrombi, and no cure is thorough unless the microscope shows that the blood is restored to its normal morphology. Such is the positive value of the microscope in the treatment of rheumatism! (D). Crystalline bodies. These are generally, 1, cystine; 2, oxalate of lime; 3, phosphates; 4, uric acid; 5, hippuric acid, etc. These bodies are found in the human body normally in the urine and fæces, but usually in the blood when imperfect feeding or some other cause has deranged the functions of digestion, assimilation, organization and excretion. If the salts are found in too great quantity to be kept in solution by the eliminating fluids, they accumulate in those fluids. Uric acid is more soluble than oxalate of lime or cystine, hence it is natural that the latter are oftenest found in the blood. The phosphates of lime, soda and magnesia, accumulate likewise. The physical presence of these salts in the blood, fluids and tissues of the body, seems to be a sufficient cause of the pathological states we call rheumatism. The proof of this lies in the fact that when these crystals are removed, along with the other conditions named, a cure is effected. It is true that persons may have the morphology of rheumatic blood, and yet have no pains, no swellings, no troubles that they can detect, until they are upset by a cold or some other exciting cause. It will, then, be more accurate to refer the morphology of rheumatic blood to the domain of predisposing causes, it being comparable to the ammunition in a gun barrel, the cold or other exciting cause being like the pulling, of the trigger. The explosion may be called rheumatism. If the gun is not loaded, or the trigger is not pulled, there is no explosion. So if the predisposing and the exciting causes are not present, we cannot have rheumatism. Once the morphology of rheumatic blood was found in a lady apparently in perfect health. She was surprised at the diagnosis, but coming later in contact with an exciting cause, she wrote, "You were right about my rheumatism;" and thus her case affords an instance of the value of the microscope in medical exploration. (E). Pigment matters. These striking objects are very impressive, and give the observer an idea that they come from the morphology of air, and hence are foreign bodies from outside the body. Giving all due allowance for this source of error, long study has convinced the writer that they, some of them, belong to the morphology of rheumatic blood. Their peculiar beauty of emerald green, bronze, yellow, black, in various shades, all invisible and unknown without the use of the microscope, opens up a new and lovely field of medical thought. What their chemical nature is, is unknown. This is a nice problem for solution. For our purpose, which is clinical medicine, it is enough for us to know their presence, and to get rid of them by putting Nature's means of elimination in good order, and giving her force enough to remove them. This, to us, seems the true way to practice medicine. 1. Cystine, $C_6NH_6O_4S_2$ (Golding Bird). A crystalline substance found in the human body. It is the most common form of gravel found in rheumatic blood. Of course, in the blood stream the crystals are subject to friction, and cannot be expected to have the exact angles of the form found on the skin, or in the still fluid of the urine. In cut No. 1, one was greenish inside and purplish outside; three was straw-color, four ultramarine, 5-10 greenish white. These were abundantly found in the blood of an adult man who suffered from acute sciatica. There were also found long skeins of fibrin filaments, strong fibrin network, red blood corpuscles, rather palish in color, sticky, and settling into ridges and huddled masses. Under a course of hot water drinks flavored with lemon juice, and with ammonia baths, along with alterative medicines, he was soon relieved of the sciatica, and his blood was found to be cleared of the cystine.



A patient in the practice of my son, Dr. John A. Cutter, sent from her home in Kentucky a specimen of urine which contained an unusually large amount of cystine crystals. He advised her that she was eating largely of the yolk of eggs, and that if she did not stop she would have rheumatism, and gave her some directions for treatment. She persisted in her dietary sins, and had what her local physicians called an extremely severe attack of neuralgia of the stomach.

Oxalic Rheumatism.—Oxalate of lime occurs in the blood, in amorphous granular masses. The urine is usually loaded with well-formed octahedral crystals, and may be milky in the granular oxalate of lime. They occur also in the fæces and expectoration ("gravel of the lungs"). Sometimes cystine is associated; sometimes other crystalline masses, crushed and fractured, are also found. Sometimes the oxalate of lime fills, more or less completely in crystals, a thrombus like plums in a pudding.

Lithic Rheumatism.—Uric acid and urates are found in the blood, in granular amorphous forms, rarely crystalline. Also in the urine, on the skin, in the fæces, saliva and sputum. Blood ropy, ridgy, adhesive. Emboli made up of fibrin and other formed elements of the blood.

Phosphatic Rheumatism.—Here the triple phosphates and the phosphates of the alkaline earths are found in the blood, in granular masses and crystals. Found in great rounded collections, which sometimes are beautifully colored an aniline blue of great purity. To make the diagnosis sure, they should be found also in the skin, or the urine and sputum. As the blood stands longer and longer on the slide and under the cover glass, these crystalline forms remain *visible, with even better defined outlines than at first,* So do cystine and oxalate of lime. The granules are not uniform in size.

Hippuric Rheumatism.—This is rare, and found usually in heavy feeders on vegetable foods, such as oatmeal. In the blood it is in granular form; crystalline forms in urine.

Carbonate of Lime Rheumatism.—Rare. Present in the blood in granular form, and in the urine in solid globes, with radial rays and dark color. Effervesce with acids.

Differential Diagnosis.—When persons complain of fugitive wandering pains, it is usually called rheumatism, especially if the pain increases at night; but these pains may be due to nervous prostration or neuralgia; that is, "pain in the nerves," the cause of which we are unable to find out. Once, at a medical college, I wished to study for demonstration rheumatic blood. A woman was brought to the dispensary with rheumatism. But her blood showed no signs of rheumatism. On examination, she was found to have uterine disease, which caused the pains.

Often have men come to be treated for rheumatism, and their blood been found to be normal, but careful exploration has found continuously in the urine, for the larger part of a week, protoplasm in skeins, or Indian club-shaped catarrhal discharge, which accounted for the pain by *neurasthenia*. A 1-inch objective is best for the detection of this catarrh.

THE DRINK HABIT.

BY W. C. HOWLE, M.D.,

OF ORAN, SCOTT COUNTY, MISSOURI.

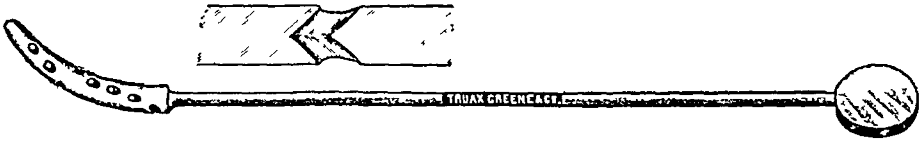
In discussing the above subject I start out with these propositions: 1, That any ailment which can be cured by moral suasion, religious enthusiasm or simple will power can not be organic in origin. 2, That the drink habit is curable by the above methods. 3, The drink habit is not primarily a disease of any organ. 4, That organic troubles are results and not *causes* of the habit.

There is much being written on alcoholism and there seems a universal idea that the habit is not merely habit, but is indeed and in truth a disease. Now, if alcoholism is a disease, how does the individual who has it get well without any treatment? We are told by the wise ones that alcoholism is hereditary; now, can any hereditary disease be cured without treatment? If so, which one. Of course there are many diseases that get well without treatment, but is that class of diseases known to be hereditary of this kind? Does any one know of a case of hereditary disease being cured by will power alone? Is there a *physician, so far carried away by this comparatively* new idea, that he will say many diseases, both organic and functional, are curable by will power? There is *no use in putting the cart before the horse until it is* shown that this is the better mode of travel. The profession have known all along that the excessive use of alcohol would bring about disease, but it is only recently that the advanced men tell us that the drink habit is a *disease* and that it ought to be treated as such, and when we find a patient with this trouble we should put him to bed and give him a regular course of medicine, diet him and nurse him until he is cured. Now for a case. I find Mr. A. drunk, and I learn from his friends that he is in a habit of getting drunk. We persuade him to go to bed. We give him such remedies as seem to be indicated and on the morrow he is all right and wants to get up and go about his business, but we tell him he has a very serious disease, *it is hereditary* and that it will take several weeks to cure him and that he must stay in bed, diet himself and take his medicine regularly, if he wants to be cured. Is is not plain to the unprejudiced mind that the above plan would not work, and that nine tenths of his (the doctor's) patients would pronounce him an ass. I'll tell you what. If you try this plan upon any man who has not injured himself, by the excessive use of alcohol, *you* will either get a cursing or lose a patron and perhaps both. But if you find some old bloat, who has spent his life sponging on his neighbors and who never *had any* manhood about him he will willingly acknowledge that he is a diseased man, he will go to the hospital and will accept of all the good things you will furnish him. He may be diseased, but it was brought about by exposure, hunger and starvation. Alcohol had but little to do with it; this *bloat* was vicious before he learned to drink and alcohol was only an incidental to his downfall and bad conduct; his association had as much to do with his condition as did alcohol. No one as yet, has told us that association is a disease, but there is as much reason in making such a statement as there is in *saying the drink habit* is a disease. I presume house-breaking and horse-stealing will ere long be included in the list of hereditary diseases. It is well enough to take care of diseased people, but once the people of these United States take upon themselves to house, feed and clothe the host of drunkards that are here and daily coming to this country then the pension business, with all its burdens of taxation, will be economical compared with the expense. No, sir, it is time to call a halt. This country is full of dead beats who are living at the expense of the working man, and it is a shame and a scandal for the medical profession to assist in fostering upon a credulous public the host *of inebriates in this* country. No, sir, inaugurate the whipping post, whip every man who is caught drunk and you will soon find these so-called diseased men very well and hearty Mr. Keeley with his nostrum of gold would soon lose his job, and the host of drunken devils who infest cities and abuse and destroy all they can will soon be found at some useful employment. Punishment is the remedy for crime; God says so and I believe it. Fine old cure for a brute who is in the habit of beating his wife and children and living off of their wages, by putting him in a hospital and feeding and clothing him and telling him he is a diseased man. Don't any doctor with a thimbleful of brains know that drunkenness is a vice? Does any body excuse theft simply because the thief was brought up in bad surroundings? No. Neither should the drunkard be excused for his conduct. The fear of punishment is the only remedy that is effective with the vicious. Once set the precedent that crime committed when drunk is excusable and this government is gone, and if the profession succeeds in convincing the law makers, as they seem determined to do, that the drunkard is only a lunatic and not responsible for his acts, then you will see a scene of carnage that was never before witnessed in any land. Then for the sake of good government, for the sake of protected homes, for the sake of all that is good and for fear of all that is evil, stop this twaddle. Tell the law makers that you were joking and that you want every criminal pushed to the full extent of the law be he drunk or sober.

A METHOD OF CURING CHRONIC GONORRHŒA.

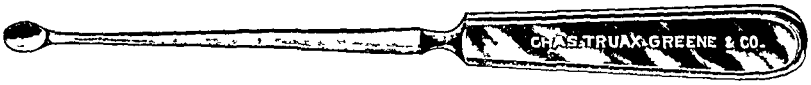
BY A. E. ROCKEY, A.M., M.D.,
OF PORTLAND, ORE.
PROFESSOR OF SURGICAL PATHOLOGY IN THE MEDICAL DEPARTMENT OF THE WILLAMETTE UNIVERSITY.

The complete confirmation, in recent years, of Naegeroth's theory of the persistence of gonorrhœa in its chronic form, and its etiological relation to pelvic disease in women, has invested the subject of its cure with a new importance. Gleet is no longer a matter of inconvenience alone. The gonococcus in that bland discharge, or in the deeper and less noticed clap shred that is periodically washed away by the urine, is sufficiently virulent to establish in women any one of a train of evils, from the milder inflammations of the lower genito-urinary tract, to pyosalpinx with its periodical pelvic or eventually fatal peritonitis.



My own work in abdominal surgery contains the record of a number of these cases, fortunately cured by operation; but the great importance of the subject has been more forcibly illustrated by two fatal cases of puerperal peritonitis, caused by rupture of gonorrhœal pyosalpinx, that have come under my observation.

While making a microscopical examination of *tripperfaden* (clap strings), during some recent bacteriological studies in Berlin, I was impressed with the idea that *mechanical scraping must be combined with antiseptic irrigation, to cure chronic gonorrhœa in the male.* The pus cells containing gonococci of which these shreds are largely composed, are derived not alone from extravasated leucocytes, but more largely from embryonal cells thrown off by the infected granulation tissue in minute fissures and ulcers. Endoscopic examination reveals not only fissures and ulcers, but polypoid granulations projecting into the urethra. The microbic cause of the disease must be reached and destroyed in order to cure it. Caustic injections into the deep urethra undoubtedly often accomplish this, but the method that I have devised is theoretically and practically superior to any others that I know of for the cure of these cases.



It requires no argument now to prove the usefulness of the curette in curing infected granulating surfaces in sinuses, the uterine cavity, or any other situation in the body. Why the male urethra has so long been an exception, it is difficult to understand.

My original instrument was made for me by Thalen, of Berlin, and since my return I have had an opportunity of practically testing its value.

It may be called a deep urethral curette, and is so constructed that, while it will thoroughly scrape any portion of the urethral surface, it cannot possibly do any injury. It will be better understood by reference to the engraving than by description. There are fourteen holes, the upper or outer edge being sharp, and the lower or inner smooth, by the direction of the bore and further rounding of the lower edge. Each communicates in the interior with the one directly opposite, thus making it possible to readily and perfectly cleanse it. The position and arrangement of the holes has been studied with great care, and makers should not deviate from the model in constructing the instrument. It passes in as smoothly as an ordinary sound, and scrapes gently but effectually as it is removed. The treatment of obstinate cases of chronic gonorrhœa with this instrument should be proceeded with as follows:

As an essential preparatory treatment, the normal calibre of the urethra must be restored, if stricture exist, by the ordinary method of curing stricture. This is imperatively necessary, and treatment with the urethral curette must not be undertaken until a sound at least one size larger than the curette has been passed. Deep urethral injections of a ½ per cent. solution of chloride of zinc may be advantageously used for a few days before curetting. The urethra is then anæsthetized with cocaine, and the curette passed until the tip enters the bladder. It is then drawn back and forth in the prostatic membranous and deeper pendulous portions several times. The vicinity of the meatus may also be treated with this instrument, but more effectually by a simple spoon curette which I have adapted to this purpose.

After the curetting, antiseptic injections must be persistently used for a number of days in gradually diminishing strength. I first use a small injection of a 10-gr. solution of nitrate of silver with the deep urethral syringe, then solutions of chloride of zinc, 3, 2 and 1 gr. to the oz., diminishing by a grain each day. I have succeeded in easily curing cases of years' duration by this method of treatment. The idea of thus scraping the urethra may seem savage, but as a matter of actual fact, it is not at all severe.

I bespeak for this method a careful trial by the profession, with the belief that it will mark a new era in the *cure* of this obstinate disease, now well known to be fraught with danger to innocent women.

I have sent my original instrument to Messrs. Chas. Truax, Greene & Co., who have duplicated it in two sizes, placing it, with the small spoon curette, the deep urethral and cone point syringe, in a convenient case.

Portland, Ore., April 1, 1892.

TWO CASES OF DYSENTERY, TREATED BY THE LONG CONTINUED USE OF BLUE MASS, WITH PERMANENT BENEFIT TO HEALTH RESULTING THEREFROM.

BY EDWARD ANDERSON, M.D.,
OF ROCKVILLE, MD.

During the summer of 1889, this section was visited by an epidemic of dysentery, with which the physicians here, myself among the number, were unable to cope. I tried everything recommended in works on practice, but was not satisfied with the result. I knew that my grandfather, a hundred years ago, used blue mass and opium in the treatment of this disease, but *how* to use it, I did *not know*. After repeated experiments, I found the proper thing to do was to combine ½ gr. of opium with 2 grs. of blue mass in a pill, and give one pill every two hours until the patient recovered.

On July 1, 1889, I was called upon to treat a lady, 56 years of age, all of whose family had dysentery, one son 20 years of age, having died a few days previously. She had had the disease ten days, and been treated by another physician with camphor and opium, but grew worse all the time. I fell heir to the case on account of the attendant's being attacked by the disease. I treated this case according to the above described plan for ten days, with gradual improvement, when I became appalled at the enormous amount of mercury taken, and stopped for awhile; but the patient immediately grew worse, and I recommenced the same treatment, and kept it up, lengthening the intervals between the doses as she improved, until October 1, when she was quite well. This lady's family history was good, every member except herself being robust, but *she* was thin enough to be remarked upon. Now she has gained flesh, looks vigorous, and one would scarcely recognize her for the same person.

The second case was that of a boy of 12, whom I had been treating several years for marasmus; he was attacked with dysentery last fall, and I treated him as I had the first case, taking about two weeks to complete the cure. Immediately after this attack, his health began to improve, and now he is one of the most robust boys in the neighborhood.

These were the only two cases that resisted this treatment for any length of time, all the others having recovered in from one to six days.

After the large experience I have had with dysentery, I do not believe it possible to salivate any one whilst suffering with the disease.

The most eminent pathologist in our State says, that the bacillus coli communis is always present in the human intestine, but is more abundant during an attack of dysentery, and that it is the dysentery germ. May not these two patients have been suffering all their lives from a superabundance of these germs, and only been freed from them by the protracted use of mercury?

A NEW SPIROMETER.

BY CHAS. DENISON, A.M., M.D.,
OF DENVER, COLORADO.

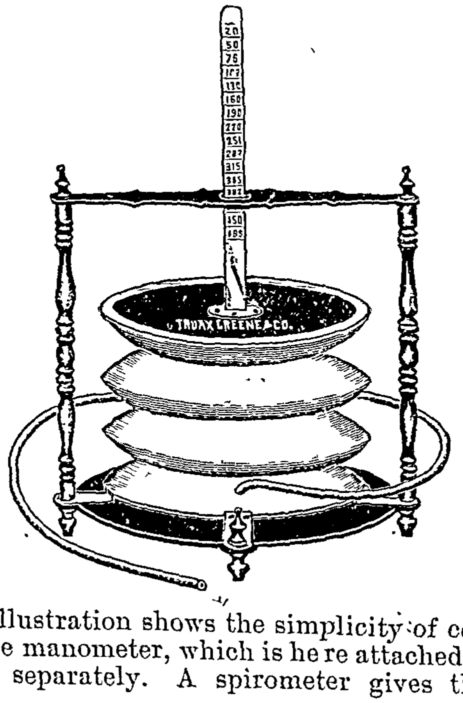
The superiority of this instrument, over any other spirometer in use, rests in its simplicity of construction. It does not depend upon water which will evaporate, or metal which will corrode, as is the case with the Hutchinson spirometer; nor does it require a certain amount of resistance to be overcome, as in elastic measurers. With Marsh's rubber spirometer this resistance is found by actual measurement to be equivalent to twenty millimeters of mercury, before any test of the expired breath can be recorded.

This new spirometer is capable of giving in cubic inches of air, the exact measurement of the *vital capacity* of the most delicate child or woman or of the strongest man. It is large enough to contain 6 small or 2 large breaths, so that an average record may thus be obtained if desired. If rightly made it is as nearly perfect as such a simple thing can be.

STANDARD VITAL CAPACITY TABLE.

Computed from 5,000 observations (Hutchinson) in healthy persons, standing, while making a full expiration into the spirometer, after a complete inspiration.

HEIGHT.	MALES.	FEMALES.	HEIGHT.	MALES.	FEMALES.
ft. in.	cu. in.	cu. in.	ft. in.	cu. in.	cu. in.
4 7	126	88	5 5	206	168
4 9	142	104	5 6	214	176
4 11	158	120	5 7	222	184
5 0	166	128	5 8	230	192
5 1	174	136	5 9	238	200
5 2	182	144	5 10	246	208
5 3	190	152	5 11	254	216
5 4	198	160	6 12	262	224



This illustration shows the simplicity of construction. The manometer, which is here attached, should be used separately. A spirometer gives the vital capacity, viz., the full number of cubic inches possible to be expelled from the lungs after a forced inspiration, while the manometer records the elastic tension which the air cells will stand under a forced expulsion of air from the chest, as compared with the average of a healthy man.

For one in health, the record at which the column of mercury can be held is about 100 M.M. of mercury.

This spirometer is purposely made to weigh very little, the light top of a cylinder, into which the air is breathed through the tube, being connected to the base by delicate impervious cloth in one piece. The size of this cylinder is so arranged that each rise (of the top) of one inch represents 100 cubic inches of of air contained therein, and this record is plainly shown by the movement of the recording rod attached to the top of the cylinder.

In the address of the President of the American Climatological Association in September, 1890, this spirometer was brought to notice in connection with a study of the different "air pressures within the chest, due to disease." On that occasion and since, I have demonstrated the lack of a just appreciation among physicians of the worth of the spirometer.

In my report on the tuberculin treatment of consumption, made to the Colorado State Medical Society in June, 1891, I formulated some rules by which a proper ventilation of lungs can be known to exist, in order that that mode of treatment may be successfully combined with the *high altitude* cure of consumption.

In brief, nature's method of attempting a cure of lung tuberculosis by the healing means of fibrous deposit, may and often does so shut up an effected lung as to preclude its proper ventilation, which is a necessary prerequisite to the use of "Koch's" lymph. While the patient's record with the manometer approximately shows his respiratory vigor, and the amount and strength of this new elastic tissue, it is the spirometric reading combined with the bilateral measurements of the chest, which will give the valuable information desired, viz., when and how far this process of shrinkage or hardening has been established.

If the normal spirometrical record for the patient's height is only one half reached, and the movements of the two sides are as one to two, then (without some compensation from the good lung) the ventilation of the affected lung must be about nil. It is practically as bad as though there were no expansion at all of the affected side, which would surely indicate that all of the one half reduced spirometrical record in this case, came from the unaffected lung.

By "without compensation" [which, however, is probably a false supposition], is assumed to mean that the unaffected lung does its full share as in health, viz.. the one half of the normal. With compensatory help from the good lung, however, the affected lung could be said to be doing from a little, up to one third, of one lung's share, or one-sixth of what the two lungs together ought to do in health.

Assuming that the above table of Hutchinson's is correct, and making the little allowance needed for the slight natural differences for the use of the two lungs in different people, and the movements of the diaphragm in respiration, then it can be asserted with much accuracy that lesser variations in the above measurements, indicate proportionately less want of ventilation in the affected lung.

To obtain accurate bilateral measurements for comparison with the spirometrical record, a good way is to mark on the patient's chest, the middle line of the sternum, and then holding, or having some one else hold the steel tape measure against the spine of the opposite vertebra, use this line as a guide in determining the difference between a forced inspiration and complete expiration on the two sides.

The above rule is illustrated thiswise: If the spirometrical record of a given individual should be 260 cubic inches in health, and it is in fact one half that, because of a contracted lung, and the movement of the weakest lung is one-fourth as compared with three-fourths of an inch on the other side, the better of the two lungs is not only not doing just exactly its normal share, but it is probably compensating for the disabled lung, the work of the two, being somewhere between all on the good side (130 cubic inches), and three-fourths there and one-fourth of this 130 on the diseased side. If the spirometrical record (say 240 cubic inches) was nearly normal, as in some very favorable cases, and the bilateral movement bore the same relation to each other as above, then the compensatory work. the unaffected lung is doing for the disabled one, would be represented by fifty or more cubic inches, because that is the difference between the normal half, 130 cubic inches, and the three-fourths, 130 cubic inches, justly attributed to this lung.

Thus every inequality in these bilateral chest movements, when compared with the spirometrical record of an individual, is an indication of lessened lung movement, which should be explained by the physical diagnosis. The spirometer may not indicate the disease but its use is so important, that the physical examination must make clear the spirometrical record of a given patient, or that examination is untrustworthy. How important then that every physician, when examining a chronic lung case, should know what the vital capacity of his patient is, that he may be satisfied himself that his conclusions are correct, as well as that he may do his patient full justice.

Authors, by their lack of appreciation of the mechanical conditions within the chest made known by the spirometer, or by ignoring the subject altogether, have greatly injured a useful instrument, as well as the profession they would serve.

I have intrusted this instrument to Messrs. C. Truax & Co., of Chicago, to perfect and supply to the profession, and I have tried to protect them as far as possible in carrying out this work.

SYMPTOMATOLOGY AND TREATMENT OF SUMMER COMPLAINT.

Lecture delivered at the Fourth Special Course of the Chicago Policlinic.

BY W. S. CHRISTOPHER, M.D.,

PROFESSOR OF DISEASES OF CHILDREN, CHICAGO POLICLINIC.

The most prominent symptoms in summer complaint are those connected with the bowels. The diarrhœa is characterized by stools which differ from each other greatly, as to number, consistency, color, and odor. Of the several phases of the stools, the odor is the one to which I wish to call particular attention. It is indeed remarkable with what certainty the stools may be divided by their odor into putrid stools and acid stools. Occasionally the stool will be described as having an intensified fecal odor, or smelling like old wood, but it is evident that such odors are but variations of putridity. The acid stools derive their odor from the presence in them of various members of the fatty acid group, all of which have arisen from fermentation of carbo-hydrates. The putrid stools, on the other hand, can only arise from fermentations of albuminous materials. I told you in my last lecture that we know of no poisons that can be produced by the fermentation of the carbo-hydrates, alcohol excepted, that can produce symptoms on the part of the nervous system, but that all the poisons that we know of, which are capable of producing symptoms through the medium of the central nervous system, and which may be formed from foods, are nitrogenous poisons. Let me recall some of the nitrogenous poisons: Every alkaloid which a vegetable contains is a nitrogenous product; morphine, quinine, atropine, the whole long list of vegetable alkaloids contain nitrogen; the long list of animal alkaloids, the ptomaines and leucomaines, contain nitrogen; every one of the toxalbumins contains nitrogen. The stools of putrid diarrhœa are liable to contain nitrogenous poisons. Why? Because putrid products can only occur from the fermentation of nitrogenous material. It does not follow because a stool is putrid that it contains poisons, but it shows that it has been formed by the fermentation of proteids and therefore probably contains poisons. If, on the other hand, it is sour, it shows that fermentation has been maintained by the carbohydrates, from which such poisons cannot be elaborated. Baginsky says that one stool may be sour and the next one putrid, the next one sour, and so on, from the various forms of fermentation that may go on in different parts of the intestinal canal at the same time. Theoretically this is true but practically it is not. When we find a child passing putrid stools it continues to pass putrid stools for several days, and when it passes sour stools it continues to pass sour stools for several days. The acid form is a milder form of the trouble, it produces agents which act locally only, whereas the putrid form produces agents which act through the central nervous system, therefore if we are able to transform a putrid diarrhœa into an acid diarrhœa we eliminate certain definite sources of danger. We may have a putrid and a sour fermentation going on at the same time, the sour fermentation being masked by the more pungent odor of the putrid fermentation. But the putrid fermentation is an indication of danger. My friend Dr. Rachford of Newport, Ky., has called attention to the fact, that if we have fermentation of proteids with the formation of poisons, whether there happens to be putridity or not, there will be symptoms referable to the central nervous system, and therefore if we have such symptoms due to poisons formed in the intestinal canal, whether with or without putrid stools, we should treat the case in the same manner as I shall teach you to treat putrid stools.

We may have stools which are large and watery, we may have stools which are small and more or less coherent. The stools may be characterized by containing blood and mucus, they may be accompanied in their passage by pain, or by straining, or by bearing down, tenesmus; they may be characterized in color by being pale or yellow or green or brown, but every one of these changes is referable to the variations in the fermentations in the bowel. It seems certain that the green stools of summer complaint are due to certain chromogenic bacteria, but the green stools are by no means the worst.

In many cases where the stools are green, due to the growth of certain chromogenic bacteria, we have no general systemic trouble, but on the other hand, where we have rather innocent looking stools, nothing but a little rice water discharge, our patient is seriously ill. In every such case of cholera infantum there has always been putrid stools at first, and they are no longer putrid, simply because everything has been washed out of the bowel. My own experience is, that brown stools are the most foul in point of odor, and the most apt to be accompanied by severe symptoms on the part of the general nervous system. The variations in color are unquestionably due to the variations in growth of the microörganisms in the intestinal canal, but may sometimes be due to the food. Mellin's food, for instance, produces a brown stool, but such stools are innocent. Some of these patients have fever and some have not. Why? Simply because in some instances poisons capable of producing rise in temperature are formed, in other instances poisons of this kind are not formed. so in one case we have fever and in another we do not. Fever is then purely an accidental condition. Again, we will have on the part of the brain such symptoms as convulsions. But convulsions are not due, I take it, to simply the draining away of the serum which the large number of movements has produced, but to the production of a convulsive poison, something that can produce convulsions, something like strychnia. I do not say that strychnia is elaborated in the bowel, but a poison having a somewhat similar action. Another point of importance is the question of coma in these cases. Some years ago, when I treated these cases exclusively by opium, I used occasionally to find a little one with what I considered opium poisoning. Later, after I had stopped using opium, once in a while the same kind of case would occur. On questioning the mother I would find that no opium had been given outside of my direction, and something else must be at fault. I see several such cases every year, characterized by contracted pupils, stupor, sometimes coma, by slow respiration and slow pulse. Now there has been formed in the bowel of that child a poison which acts like opium and produces these symptoms. How shall we get rid of it? I have invariably given the nitrate of potash and water, and in the course of two hours, invariably profuse urination has occurred and with it all symptoms have disappeared; in other words, the poison has been washed out through the kidneys. Here, then, is one set of symptoms which is evidently produced, so far as clinical information can teach us, from something developed in the bowel. Again we have patients troubled with insomnia, and it is likely that this sleeplessness is caused by poisons produced in the same general way. Now, let us take up the question of depression, for that is the most important one. Our little patient is weak, the fontanelle has sunken, the eyes have sunken, the skin is cold and the pulse indicates collapse. Now to what is that due? Is it because the baby has had four or five or a dozen stools that day? No. If you had given the baby sulphate of magnesia there would be the same loss of serum. Would the child be in that shape? No. There is another element there besides the number of stools. I believe the mere number of stools is of secondary importance. The question of loss of fluids we have been taught to think much of—too much indeed. But let us suppose we had introduced a motor depressant into this child's blood, say conium or curare, what would have happened? Almost the same condition of collapse. It is evident that the collapse has been produced by some poison, and not simply by the number of stools that have been passed. If we believe the collapse to be due wholly to the number of stools we would most rationally proceed to stop the stools; we would give the child opium, tannic acid or anything to stop the flow from the bowels. But if it is due to a poison that has been formed in the intestine, what are we to gain by stopping the number of stools? Nothing. We may even do damage by retaining in the bowel the source of the trouble. I beg of you, then, to regard summer complaint as presenting various phases, but due entirely to poisons formed in the intestinal canal. On the other hand, we find that sour stools cannot produce poisons of this kind, but still we have movements from the bowels, and we can only explain the phenomenon on the ground that the products of acid fermentation are directly irritating to the mucous membrane of the bowel and act by locally stimulating the bowel, by locally increasing its functions. But remember that such irritations do not and cannot produce collapse; that they do not and cannot produce coma; that they do not and can not produce convulsions; all the serious conditions are thrown to one side and only the local ones of increase in the number of stools and pain remain. Now then, here comes in the explanation of Dr. Rachford. If these depressed conditions occur, no matter what the number of the stools may be, the trouble is due to poisons formed from nitrogenous material. If we can stop the proteid fermentation, even if we have to leave an acid fermentation, we shall make a decided gain for our patient.

Now as to the treatment proper. It consists of two general steps: first to remove the cause, second, to repair the damage done. These two steps apply to almost any disease, but particularly to this one.

First, remove the cause. How? We have found that the cause is due to certain fermentations going on in the bowel; let us get the poisons out of the bowel. How? by the use of laxatives first. To empty the bowel of a baby, gentlemen, is a work of art, it is not a simple thing. We can give a dose of castor oil and have a certain number of stools produced; we can give a dose of calomel and have a certain number of stools produced, but we are by no means certain that we have emptied the bowel of the child. Don't forget this point; it is exceedingly important. I shall refer to it again. My preference by way of preliminary cathartic is calomel in grain doses four hours apart until three grains are taken. I give a child six months old one grain of calomel every four hours until it has taken three doses. Sometimes a child may be having eight or ten stools a day; you give it calomel and it will be brought back the next day with a report of four or five movements instead of the increase you had reason to expect. I cannot explain this phenomenon, but it occurs with sufficient frequency to attract attention. The actual number of stools will be diminished under the action of the cathartic, and what is more, the child will be better, irrespective of the number of stools. Sometimes the number of movements will be very much increased; the child will be having four or five a day and after taking the calomel it will have eight or ten or more and yet be better. I have never seen any bad results from the use of calomel, although bad results are reported under such circumstances, but I have prescribed it so many times and given it to so many babies under these circumstances that I have no hesitation in giving it in the quantity mentioned to a child six months or older; the quantity need not be increased for older children. If too large a dose is given it is simply swept out of the system, there is no such thing as giving too much in order to purge freely. But understand, that the calomel empties the bowel only partially, and by no means does it always get everything out. What shall we do next? To still further empty the bowel I would recommend the use of copious injections of water, and they can be introduced either with or without the aid of a rectal tube. The quantity of water to be put into a child's bowel is something to be considered. In one method of irrigation, the water is allowed to run in and out at the same time. By that means only the lower part of the bowel can be washed. My plan is to fill the bowel with water, I want to reach the cæcum, because there is where most of the trouble lies, where the greatest amount of damage has been done, where the autopsies prove that most of the poisons have been absorbed. Because there is where we have the most ulcers, and no matter whether we have enteric disease or dysenteric disease symptomatically, the actual lesion is in that part of the colon. I put into a child a year old a quart of water at a time, and it will hold it. This seems rather a large quantity, but patient after patient I have had in my clinic, brought before the class for the distinct purpose of showing them how much water a child will hold, and it is remarkable how much they will take. I set the quart as a limit; a half gallon will nearly fill an adult's colon. But some judgment must be exercised with regard to the quantity used; if you have reason to believe that the bowel is badly ulcerated and liable to be torn because of pressure, you should not put in such a quantity of water, but in an ordinary acute case you can put a quart in. A fountain syringe is the safest means of introducing the water. When it is in it runs out again, of course, as soon as you take away the tube. But the bowel does not completely empty itself at once. The mother will tell you that the child passes about a pint and then stops, and the remaining water will come away in about twenty minutes or half an hour. Do not put into the water you use to wash the bowels, any poisonous antiseptic; do not use bichloride of mercury to wash the bowels, because you might have enough of it stay behind to produce poisonous symptoms. It is not needed; clean water is quite enough. The object of the water is to wash out the bowel and clean out the little loculi. You remember in the large bowel there are little pockets at one side which form convenient places for fecal matter to lodge in, and when we give a brisk cathartic like calomel, it strikes right past these pockets and does not clean them out; but with the slow washing out of the bowel the water will seek out these pockets, and clear out their contents. Very frequently these masses of retained feces are the sources of the poisons. This illustrates the substantial identity of putrefactive constipation and summer diarrhœa, and justifies their being included under a single term.

Now we have gotten this bowel clean, apparently so at least, by means of the preliminary purge and the washing. So far so good, but we have only taken out of the bowel the larger mass of material there present, we have not washed it clean. You could not sterilize in that way a test tube, and much less so complicated a tract as the bowel. You have not got it clean but you have got the bulk of the material out and you have removed the bulk of the poison, but the germs remain behind, at least enough of them to set up the trouble again. Our baby will probably seem better, some of the symptoms have disappeared and the child is undoubtedly better, but we want to kill the germs there, we want to kill the particular germs that are producing the trouble. How can we do it? We have at our disposal a large number of intestinal antiseptics, the best among them are unquestionably calomel and bismuth. The calomel which we have originally given acts as an antiseptic, but its action is only temporary, it does not and can not sterilize the bowel. If we wish to use it still further as an antiseptic we will give minute doses of one-tenth or one-twelfth of a grain every three or four hours, but the results will be only partially satisfactory. Next to that our best antiseptic is bismuth and to employ it successfully as an antiseptic we must use it in massive doses. The dose of bismuth, like calomel, is not to be measured with great accuracy. I usually give a dose of ten to fifteen grains three or four times a day to a child six months or a year old. Bismuth does not produce any systemic effects, but you want to give enough to produce an effect in the intestinal canal, and two or three grains of bismuth are not enough. There is one objection to bismuth. Besides being an antiseptic, it unquestionably is, to a certain extent, an astringent. Many times I have thought the diminished number of movements following the use of bismuth were due to the curative effects of the drug and that the poison had been destroyed, but I have reason to believe that it was really due to the astringent effect of the bismuth, and this effect in the early stage of the treatment is not desirable because it retains the poisons we want to get out. Then we have naphthalin, salol, resorcin and a whole host of drugs of that type, but they are unsatisfactory. Fortunately we have a much better means at our disposal. Suppose we have a diarrhœa and the stools are distinctly putrid; we know there has been fermentation and that the germs producing it are living on proteid material, so we simply keep that kind of material out of the bowel and starve the germs; there you have the keynote of the whole method of feeding. Starve the germs, do not try to get them out with chemicals because you cannot do it. You accomplish something in that way but you cannot kill them all. But when the child has a putrid diarrhœa you must keep away from it all proteid material, keep away meat, fish, milk and eggs. Keep away those foods which are capable of undergoing putrefaction. Meat would not be given to a child of that age; fish would not be given to a child of that age; eggs would possibly be given, but milk would most certainly be given. Milk has been the chief diet of this child before it was taken sick, and the proteids of milk are what the germs in that intestinal canal are best adapted to live on. Above all things stop milk; that is the first thing to do when you have a putrid diarrhœa. Do not be led into giving milk because the books tell you that it is a bland and non-irritating diet. That means nothing. We are not trying to save that bowel because it is in an irritated condition, but we are trying to prevent the formation of poisons, and therefore we will keep out of the bowel material from which they can be formed, and that is in this instance proteid material. Now if we have to keep proteid material out what shall we put in? Anything which cannot support the obnoxious germs; anything which will starve them out and still be food for the child. The books tell us that in severe cases we should stop all food. If we stop all food we can certainly starve the germs but it strikes me we are going to starve our little patient also, and put a strain upon him that is unnecessary. If we must take away meat, fish, eggs and milk let us give him the starches and sugar. Many years ago Moore, of England, advised that these cases be fed on cane sugar exclusively. Such a diet is right, but you don't need to limit them to cane sugar; give them starches. I take a child six months old with putrid diarrhœa and give it arrow root, or rice, or crackers, or baked potato, but not milk. But you look surprised to hear me advocate potatoes and crackers — solid food in diarrhœa. When we have the theory of this disease that I have attempted to give you, that it is not due simply to an irritated condition of the bowel, why not give solid food? I assure you, from a personal experience of several years in this matter, that solid foods act most beneficially. Milk is a solid food; it is not liquid. It is only liquid before ingestion. The first thing that happens to it in the stomach is coagulation, so that it is probably more irritating from a mucous membrane standpoint than any amount of starch. We are told these babies cannot digest starch because they have no salivary secretion and no distinct pancreatic secretion. I will admit the physiological statement that their salivary and pancreatic secretions are both deficient, but I deny the other statement. It has been assumed that because these two secretions are deficient, that infants cannot digest starch; but we all know of babies who have been given arrow root from their birth, and who have digested it perfectly. We all know that babies can and do digest starch; they do it daily. Why, there is hardly a secretion in the body but is capable of digesting starch so that it can be absorbed. Right here I wish to be understood that I do not advocate starch as a continuous food for infants, but I am speaking of its use for temporary purposes; it does help that child along when it is poisoned; it does serve a purpose with that child when we want to take away other kinds of food, and in giving starch we have the advantage of not depriving that little one of all food. How about predigesting the starch? We do not need to predigest the starch; the great bulk of children can digest starch, particularly the small amount necessary for our purpose.

I told you that milk was bad for this condition; how about peptonized milk? Peptonized milk is worse. Why? I know some of you have used peptonized milk, and in some cases with good results, but I wish to assert that if you did get good results in those cases, you could have gotten better results in some other way. This preparation is generally bad. In the first place, it is peptonized by means of a pancreatic ferment. If you will experiment, by putting some hard boiled egg in a solution of pepsin and hydrochloric acid, and leaving it over night at the temperature of the body in a suitable oven, you will find that it has not only digested completely, but that it has a peculiar odor that is not unpleasant; but take the coagulated egg albumin and put it with trypsin in an alkaline solution, and subject it to the same conditions, and you will find, as you open the incubator, that it has a distinct fecal odor. If you leave it a few hours longer, the fecal odor will become stronger, and in a few more hours the odor will be unbearable. The mass has become putrid. Now the action of trypsin upon proteid material is to break it up in such a way that the germs of putrefaction can thrive therein. They thrive readily in the products of tryptic digestion, but not readily in the products of peptic digestion. The milk partially peptonized by this pancreatic extract, is only in a better shape to undergo putrefactive changes when it reaches the stomach and bowels. If you put it into a perfectly healthy alimentary tract, no harm will occur; but if you put it into a bowel that is already contaminated with putrefaction-producing microörganisms, you have only helped those microörganisms to the extent to which you have digested that food. Understand, I do not say that there are no conditions in which peptonized milk may prove useful, but am merely condemning its use in the putrid diarrhœa of infants.

Now about sterilized milk. It is practically pure so far as germs are concerned, but just as soon as the sterilized milk reaches the infected intestine, the germs there begin to develop in it; not so readily, perhaps, as in unboiled milk, but just as certainly as in any other kind of milk. Sterilized milk, therefore, is not the proper food in putrefactive diarrhœa, because it has essentially the same chemical composition as any other milk, and it is the chemical composition that is guiding us at present, and not its bacteriological condition. Sterilized milk, therefore, should be used solely as a preventive; if we start with a healthy child and feed it sterilized milk, we run that much less chance of introducing pathogenetic microörganisms into the intestines, but after they are once there, it has no power to get them out. Milk from the mother's breast does just as much damage as milk from any other source. Other things being equal, I would rather treat an acute case of diarrhœa in a bottle baby than in a breast baby, because I can give the bottle baby just what I want to. Frequently I would take the baby from the breast for thirty-six hours, keeping up the mother's secretions by the breast pump, and feed the baby as I would like to; but we cannot always do this, and where I cannot do it I find that I do not get as good results in treating diarrhœa in breast fed babies as in bottle fed babies; I cannot cure them so quickly because I cannot feed them right. Such a procedure is only necessary in severe cases.

How long is it necessary to withhold proteid food in acute diarrhœa? Twenty-four hours will usually suffice to correct the odor of the stools; at the end of that time stools which have been rotten will have lost their putrid odor, usually, and at the end of forty-eight hours they will certainly have lost their putridity. But it is desirable, where possible, to withhold proteid food for several days after the stools have lost their putridity. In chronic cases, where there is already ulceration of the intestine, the putridity is maintained by something besides the intestinal contents. Let us say the putridity has ceased, what will occur? Almost always the stool will become sour; in other words, an acid fermentation which has been going on in addition to the putrid fermentation continues, so that we still have left a cause for diarrhœa, but we have transformed a diarrhœa which was capable of causing nervous symptoms into one which is only capable of producing local symptoms in the bowel; we have transformed a dangerous trouble into one comparatively simple. That is what has been gained by the method of feeding.

I think this will give you, in a general way, my idea of how to remove the cause. Remove it by purges, remove it by washing out the bowel, remove it by antiseptics, and above all by starving out the germs by withholding their proper food.

One other thing: that is washing out the stomach. It frequently happens that we cannot by all these means at our disposal control things as we would like to, and it becomes necessary to wash the child's stomach. Washing the stomach, particularly where vomiting is present, is of great service, but you are not required to do it very often. I have had comparatively few cases in which it was absolutely necessary, but I believe if I had resorted to it more frequently I would have had better results, would have cut short more cases. But it is a very troublesome measure. Washing out the bowel is an easy matter, and can be done by the mother, but washing out the stomach is something you must do yourself.

The question of the treatment of vomiting in these cases is to be considered. The vomiting is probably not due, not always at least, to local conditions, but most likely it is due to the poisons produced by the various fermentations present, and it disappears when the poisons are removed. When it is present, however, it is a very serious complication, as it prevents us putting anything at all into the child's stomach. If persistent vomiting is present, we should always wash the stomach by means of the stomach tube, and this often gives relief.

We have removed the cause, how shall we repair the damage done? Ordinarily, with the removal of the cause, the child promptly recovers. But the matter is different in a severe case where the child has been seriously ill from a sharp attack of cholera infantum, and at the end of a few hours of illness is in a state of collapse; sunken eyes, sunken fontanelle and pale, cold surface; rolling the eyes about, opening the mouth, showing the dryness of the lips, etc. What shall we do? Evidently, in such a case, there is no time for delay, the damage is too severe, the poison must be directly combated. We will of course stop all food at once, because we cannot run the risk of doing that child further harm; particularly would we stop milk. We would wash the bowel as far as we could, for a double purpose, the one to remove from the bowel as much offending material as possible, although but little will be found; the other, to supply some of the fluids which have been lost. The water used should be as warm as can be borne. The peculiar depression must be combated by all possible means. First, by external heat in the shape of hot baths and hot blankets wrapped about the child to stimulate it. Opium here is of great value; so also is belladonna; it directly counteracts the poison present, it is a stimulant to this particular condition. Another thing: if it is possible to get fluid of any kind into the child, do it. Why? Because that fluid will pass out again through the bowel, possibly through the kidneys, and as it goes it will wash out some of the poison which is doing the harm. Our object in a case like this is simply to support life. We cannot attack the case on the lines I have given you before; we must counteract the poisons as well as we can by heat, belladonna, opium in small quantities and by washing out as far as we can through the process of elimination.

In chronic cases, those which have lasted three weeks or more, the greatest good is accomplished by regular daily lavage of the bowels. The use of intestinal antiseptics, particularly bismuth, is of considerable service. In long-continued cases, laxatives can only be used occasionally. While the diet is to be directed on the same lines as those already laid down, it need not be adhered to so absolutely.

We all have our type cases of which we make much. Among mine is one which I should like to relate to you now: A rachitic baby, which had been under my observation for regulation of diet, was suddenly taken with convulsions. Apparently the bowels were in a pretty fair state at the time. The convulsions commenced at 4 o'clock in the morning, and lasted until noon. I first saw the child about 8 A.M. The temperature then was 102° in the rectum. I suspected the bowel as the source of the trouble, and endeavored to empty it. I gave the child calomel by the mouth, washed the large intestine, and gave by the rectum a small dose of croton oil in emulsion. Quite free purgation ensued, but the convulsions continued, and I was forced to think that they had their origin in some other cause, most likely the onset of some infectious disease. I was finally reduced to the necessity of administering chloroform to control the convulsions. In the afternoon the convulsions returned, and the temperature rose very rapidly until it reached 107.½°. Cold baths and antipyrin were employed without success in combating the temperature. What was making this temperature? Just before the little one died, it passed a mass of the most putrid feces I ever smelled. There was the source of the trouble; it was absorbing poison from this mass, and if I had continued trying to empty the bowel, possibly I could have saved that child.

Now then, to repair the damage done, we must meet the symptoms as they come up. If the child has fever we will endeavor to meet the temperature by sustaining the child's strength with alcohol and by producing sweating. If the temperature be high you can produce sweating in several ways. One way is to sponge the body over with almost ice-cold water, then wrap the child up well; there is an immediate reaction. The skin becomes red and soon there is profuse sweating. That can be done with a baby where you could not do it with an adult. So we take the temperature down, as in any other disease, but particularly do we look to the bowels as the source of the trouble in these cases. In those cases where the temperature runs up to 106° and 107°, and which are sometimes called sunstroke, the trouble is probably always in the bowels, and you should remember that even after you have given a cathartic you are not through with the bowels until the symptoms cease.

I should like to say a word regarding the opium treatment of this disease. For a number of years I treated these cases with opium. There can be no question but that good results can be obtained many times by the use of opium. In the first place because of its stimulant effects, and in the next place because it relieves the pain and thereby strengthens the child. If used in the shape of a Dover's powder, it acts as an eliminant and we have some of the poisons thrown out, and in general it is a direct antidote to the poison, so that the use of opium amounts to treating the poison by a direct antidote instead of treating the disease by getting rid of the poison. It is not so illogical as one would imagine, but I don't think the treatment is good; relapses, so-called, are more apt to follow the opium treatment than the plan which I have outlined.

Another thing please do not forget; that is, that you are at all times treating the baby, and not the disease. Never treat a case of putrid stools, but be kind enough to treat the baby who is unfortunate enough to have those putrid stools. We see cases where the child is passing the most abominable stools, and yet it may be well, happy and lively; don't put such cases amongst those I have asked you to treat; they are going to do well enough if you will let them alone. We must use judgment in these things. We have many cases come to us that fortunately do not present the exact conditions for interference on the lines I have laid down for you; and remember they do not need any such interference; they will get well if you wash out the bowels. You must remember that it is not simply the putridity that directs you to interfere, but the continued severe nervous symptoms accompanying it.

Suppose the stools are already sour; theoretically, you have got to keep out the starches, but what have you to fall back upon? Nothing in the world but white of egg. At one time I tried this plan, with the result that I succeeded in changing acid diarrhœas to putrid diarrhœas. A sour diarrhœa we can treat with bismuth and complete withholding of food, or the use of milk. The milk will keep up the sour diarrhœa because of the sugar in the milk, but it is the best we can do. Remember that a sour diarrhœa is not ordinarily dangerous. We can also give opium, and this is the place where we may want opium. The acid produces colic in the bowel and also flatulence. The gas does not cause the pain; it is the acid that causes the pain. Lavage of the bowel can also be profitably employed. The acid form of the trouble is not so amenable to dietetic treatment on the plan I have given as is the putrid form, and we must treat it on other grounds.

SOCIETY PROCEEDINGS.

Chicago Pathological Society.

Regular Meeting, April 11, 1892.

DR. C. D. WESCOTT IN THE CHAIR.

Dr. Edward F. Wells read a paper entitled

PNEUMONIC GANGRENE.

He said that Laennec, to whom we owe the first clear and precise treatise on pulmonary gangrene, met with only a few cases in all his immense experience. Andral, with unsurpassed facilities for observation, had no well defined views of his own and contented himself by saying that the very existence of this termination had been denied by some, and that in his opinion the entire subject required further study. Stokes never met with a case in childhood, but saw several in adults. Copeland observed the condition but rarely. Cullen states that the termination of pneumonic fever in gangrene is much more rare than has been imagined. Trousseau, in the course of an experience, which for extent, breadth and duration, is accorded to but few, never saw a case. Elliottson also never met with an example. Walshe says that it is "one of the very rarest terminations" of this disease, and similar words are used by Frank, Lépine, Tanner and many others. Of Grisolle's three hundred and five cases not one terminated in gangrene. Sturges goes so far as to deny that gangrene is ever a consequence of the pneumonic process. Ziemssen met with it only rarely, and Baginsky not at all in infantile cases, whilst West does not consider it very common.

Were every case of pneumonic fever accompanied by fœtid breath considered as one of pulmonary gangrene we would meet with this complication on every side and in abundance. If, however, it be required that the diagnosis be established by a sufficient array of corroborating, if not unequivocal signs and symptoms in the cases ending in recovery, and by the indubitable evidence of *post mortem* section in those terminating fatally, they will be encountered much less frequently.

But even the evidence of the dead house, as reported in times past, must be accepted with caution. Thus the ancients speak freely and often of a gangrenous condition of the lungs, but it is more than doubtful whether they refer to an actual death of the tissues, to which state we now limit this term, or merely to a dark or black color of the parts. That this inferential unreliability of their accounts is well founded is evidenced by the consideration that, although a gangrenous condition is so frequently referred to, yet the leading and obvious symptom, that of fœtor, which could scarcely escape notice, is not often mentioned in this connection. Even Graves, only half a century ago, spoke of lung tissue breaking down easily between the fingers, "resembling gangrenous lung, except that there was an absence of fœtor."

Gangrene of the lungs may arise from one or more of several conditions. Thus a cavity—tubercular, from abscess or from dilated bronchi—within the hepatized area may be the starting-point of the necrosis. The stagnant contents of the cavity putrefy and infect the cicatricial walls, which from the nature of their blood-supply are illy able to withstand an energetic inflammatory onslaught.

Cases of this kind are by no means rare. Laurent reports the case of a consumptive lady, who had had several attacks of hæmoptysis, who was taken with an acute pain in the right side, followed by the ordinary symptoms of pneumonic fever. On the fourth day the cough was violently convulsive and she expectorated a large quantity of greenish pus, mixed with a black substance having a horribly fœtid odor. Expectoration continued for ten months when recovery finally ensued.

Two of Dr. Wells cases were of this nature.

Case 1.—A farmer, aged 60, temperate, but with a broken-down constitution, and long a subject of chronic bronchitis and well marked bronchiectasis, was taken, Oct. 20, 1878, with the ordinary symptoms of pneumonic fever, locally affecting the upper lobe of the left lung. On the eighth day, and suddenly, the breath and expectoration became horribly fœtid. The cough was infrequent, not very severe, and the comparatively scanty expectoration was raised without much effort. The expectoration was of a dirty, reddish-brown color, thin and not viscid. After standing for twenty-four hours it exhaled a valerianic odor which was not particularly unpleasant. If, however, the fluid was agitated the fœtor was again manifested. At the bottom of the conical glass there was a considerable sediment, consisting of pus cells, altered blood corpuscles, etc. Elastic tissue was not recognized. The patient at once passed into a state of extreme prostration, with coldness of the surface, sub-normal temperature, sighing respiration, apathy, etc., and so remained for several days. On the sixteenth day of his illness he was able to sit up and with slight support to walk about the room. The quantity and quality of the expectoration varied from time to time, but it gradually became more purulent and less fœtid, so that at the end of six weeks it was no longer gangrenous. The patient remained weak and unable to work for several months, but he eventually entirely recovered.

Case 2.—An intemperate farmer, aged 42, had an attack of pneumonic fever in November, 1874. The exudation material was slowly removed, his cough continued, and in the June following he had hæmoptysis. The case developed into one of unequivocal phthisis, with the formation of cavities. In December, 1880, after exposure to cold and wet, he again suffered an attack of pneumonic fever, locally affecting the left lung. By the sixth day the fever had disappeared and convalescence seemed assured, but during the night symptoms of collapse set in and he died, suddenly, early in the morning. At the autopsy the upper lobes of both lungs were found riddled with tubercular cavities. The base of the left lung was found hepatized, mottled on section, and the bronchi filled with muco-purulent matter. In the upper portion of the lower lobe, near the root of the lung, posteriorly, was an abscess cavity, the size of a pigeon's egg, with thick walls, and a free opening into a large bronchial tube. It was full of pus and a portion of the wall the size of a finger-nail was dark, shaggy and gangrenous. This portion readily broke down under pressure and exhaled a very fœtid odor, which clung tenaciously to the fingers.

Gangrene may result from excessive exudation into the alveoli and pulmonary parenchyma. In these cases the circulation is so much impeded that death of the parts ensues. This is probably the most frequent cause. It has been supposed that a highly hæmorrhagic exudate is especially prone to be followed by gangrene, but this is scarcely possible. Delayed absorption of the pneumonic deposit and gangrene frequently appear together, because they are both due to the same cause—insufficient blood-supply.

Pneumonic gangrene is no respector of sex, and is observed in the two sexes in about the same proportion as pneumonic fever, viz., 73 per cent. of males to 27 per cent. of females.

Thus the cases of Huss—twelve—were all males. Of the nine cases observed by Kaŭlich 7 were males. Of Lebert's 32 cases, 22 were males, and of Dr. Wells' 8 cases, 7 were males.

It has been thought that gangrene is more frequently the issue of pneumonic fever in the aged than at other periods of life, but the information at Dr. Wells' disposal leads him to conclude that age, beyond that of childhood, is not an influential factor.

Thus of 60 cases analyzed by Lebert 10 were under 20 years of age, 37 were from 20 to 60, and 13 were over 60. Of 63 cases analyzed by Laurence 6 were under 20, 43 were from 20 to 60, and 14 were over 60. Of 9 cases, observed by Boudet 5 were children, 2 adults and 2 aged persons. Huss' 12 cases were all adults. Of the author's 8 cases, 1 was a child, 6 were adults, and one an aged person.

The treatment of pneumonic gangrene, whether expectant, medicinal or operative, must be governed entirely by the nature and surroundings of the individual case. These cases vary so much and essentially in their local and general characteristics that they can never be successfully managed by universal and inflexible rules. For therapeutical purposes we may arrange our cases in classes as follows: *a.* Cases in which the gangrenous focus can not be definitely located. *b.* Cases in which the gangrenous patch presumably occupies the walls of a preëxisting cavity which can be located. *c.* Cases in which the gangrenous mass occupies virgin soil, is of considerable extent, has broken down into a mass of débris and either remains unopened or has evacuated its contents into the bronchi, pleura or other space. *d.* And finally, those cases in which the necrosis is of great extent—e.g., occupying the whole or greater part of a lobe, but has not yet resulted in disintegration of the tissues.

The first class of cases are open only to medicinal treatment, as are also the vast majority of the cases in the second class, although operative interference may be allowable under exceptional circumstances. In cases of the third class medicinal measures may be all that is necessary in those in which the evacuation is into the bronchi, provided the débris is of a consistence to allow of its passage through the opening, but in other cases an operation will be generally necessary to effect a cure. In the last group of cases, heretofore uniformly fatal, we may well consider whether it were not possible to give the patient a chance for his life by enlarging to some extent the operative field.

Dr. Wells reported 8 cases and dwelt at great length upon the literature of the subject.

Dr. J. M. Patton, in being called upon to open the discussion, said: Mr. President, unfortunately I did not hear the main part of the paper, so I hardly feel able to discuss it.

It seems to me that there are two things of especial interest in regard to pulmonic gangrene, one is the question of diagnosis, and the other is *when to operate.* I do not think that we have had sufficiently large experience in operations upon lung tissue for pulmonic gangrene to make an accurate estimate of our ability to relieve such a condition by this method. One of the obstacles in our way is difficulty of diagnosis. In circumscribed gangrene it is difficult to determine whether the gangrene is from a gangrenous phthisical abscess or bronchiectatic cavity which is furnishing the secretion; unless the practitioner has had the opportunity to follow the case and determine for himself positively the relative sequence with which the symptoms will obtain in these cases, it is hard to tell which is the first to appear. If the symptoms of the cavity follow the fetid sputa it is fair to presume that you are dealing with a gangrenous portion of the lung which is breaking down. On the other hand, if the symptoms of a cavity precede fœtid sputa, it is fair to presume that you are dealing with a bronchiectatic cavity or some other cavity which is supplying the fœtid secretion. It is not always possible to tell these things positively. They are very confusing, and that fact militates more against the possibility of operating early enough than anything else.

I do not think that in diffuse pulmonic gangrene resulting from infection of the lung, pyæmia, or from the effects of infectious emboli, large infarcts, or that which occurs with pneumonia, that the possibility of gaining anything by operative interference presents very often. As a rule these cases are not benefited by an operation. They are usually fatal under all methods of treatment.

The case that Dr. Wells has cited was an exceptional one. I think a man with a large experience may run across such a case in a lifetime where the gangrenous portion is sufficiently near the surface and circumscribed to produce the symptoms he has mentioned. Where it does present the thing to do is to operate. When rupture has taken place into the pleural cavity, of course the operation should be done immediately in order to afford drainage. We need more experience in this line, and we need more operations to prove just what we can do with these cases.

The medicinal treatment of pulmonary gangrene is entirely unsatisfactory. It should be stimulating. Opium may be given for pain, but it must be carefully administered in order not to produce depression. Bromine, chlorine, thymol, menthol, creosote, and such remedies may be given as sprays or internal disinfectants, but I do not think much satisfaction will be derived from their use. Acetate of lead and tannin are recommended, but their efficacy is doubtful.

In nearly all instances it will be possible to make a positive diagnosis only by the presence of decomposed pulmonary tissue in the expectoration. When a gangrenous focus is not in communication with a patent bronchial tube there may be entire absence of fœtor or expectoration, and under these circumstances a diagnosis would be difficult or impossible.

In abscess the sputa may be purulent in character, and fœtor may not be present until some time after expectoration. In bronchiectasis the sputa may be purulent and nummular in character if the dilatation is large, surrounded by fibrous tissue, and near the surface a cracked pot sound may be obtained, the breathing is harsher, cavernous or amphoric breathing, and prolongation of the respiration is more apt to be found than in broken down lung from gangrene.

Harold N. Moyer, M.D., Adjunct Professor of Medicine in Rush Medical College, Chicago, read a paper entitled

"DUTY OF THE PROFESSION IN CASES OF INEBRIETY."

Is inebriety a vice or a disease?

To the philosophical mind it would seem as if the above question were useless, as our answer will depend almost wholly on the definition that we attach to the terms "vice" and "disease." The term disease as used by medical writers has come to have a narrow and restricted meaning that was not true of the old French word "*desaise*," from which the word is derived, and which simply meant a want of ease, or discomfort, and might be applied to an immense variety of conditions and objects. This broader use of the word was common with the early English writers; Spenser says, "Labored long in that deep ford with long disease," but of late the term has become more and more restricted until it is now largely used by medical writers to designate certain morbid conditions of the body or its organs, usually accompanied by a disturbance of function or appreciable alterations in the tissues. Later writers, particularly those indoctrinated with the evolutionary views of Darwin, Spencer, and Huxley would again enlarge the scope of this term, and now define disease as a "want of harmony between the individual and its environment." In this broad sense all vice and criminality are but diseases, which is substantially the view adopted by Lombroso, Maudsley and others interested in criminal anthropology. In this, as in many discussions, an exact appreciation of the scope and agreement as to the meaning of the terms employed would at once settle the main points of contention.

It is apparent that in the narrow restricted sense, inebriety cannot be considered a disease, certainly not in the sense that pneumonia is. Of course, the secondary effects of alcohol, the changes of brain, stomach and liver that are produced by it, are diseases; the question, however, does not relate to these but to the drink habit *per se.* At first it would seem that inebriety must surely be a vice, that to drink alcohol or to refrain from doing so is something peculiarly within the domain of the volition of the individual, and if we adopt the theological conception of free-will, we must place inebriety among the vices, but it is at this point that evolution steps forward and denies the freedom of the will in its broad sense. We are, therefore, on the horns of a dilemma, we must accept one theory or the other, which shall it be? Before answering this question, let us consider the question of utility, for theories must, to a large extent, govern practice, not only in medicine but in all human affairs. The world once burned its witches, because on the theory of witchcraft they believed it would be dangerous to allow witches to live and be at large. The revolving stool, baths of surprise, and chains were part of the necessary outfit for the treatment of insanity. It was not that the people of those times wished to be cruel, but the treatment was the outgrowth of a mistaken theory of insanity. This theory was based on the metaphysical conception of free-will. The doctors interrogated their own minds and found that they had the power to control their wayward fancies and coördinate their conduct. They believed that lunatics had the same power if they were only furnished a sufficiently powerful motive, hence the stripes and chains with which lunatics were treated and, according to their theory of diseases, the treatment was certainly appropriate. They could not conceive of the mind being diseased, hence insanity marked but an imperfection in the will. The same question is now raised concerning inebriety, and we must ask ourselves whether the chronic drinker *will not* or *cannot* abstain from liquor. If the liquor habit marks but an imperfection of the will, its natural treatment will be by prayers, exorcisms, and moral suasion as well as fines and imprisonment. The world has been following this prescription for many years, and with so far but imperfect results. The agitation against liquor has greatly lessened its use as a beverage, and has quite banished it from the tables of the better classes of the community, but at the same time we doubt if there has been a material decrease in inebriety. Certainly not if we count the various drugs habits that, in a measure, have taken the place of alcohol. The chief argument that is used in support of the vicious theory of drunkenness is that to admit for a moment that the inebriate is a diseased person, removes at once all incentive to moral regeneration, that he will sink supinely into the condition of an interesting invalid, and will give up all hope of reformation. We do not think that this view is well taken or that it is borne out by the experience of those skilled in the treatment of inebriety.

If we tell a gouty person that his disease is the result of an indiscretion in diet, and that he must be more abstemious in the future, do we thereby lessen his inhibitory power? Would it be better to say that there is nothing the matter with him and that the pain in his toe marks but an imperfection in his morals?

If we assume that inebriety is a disease, we place an additional restraint upon the use of alcoholic liquors. If the consequences of over-indulgence are once clearly pointed out, and that the chronic ingestion of alcohol not only produces a disease, but in a measure renders an individual irresponsible, not only will there be an additional incentive to refrain from its use, but the community will deal much more justly and vigorously with the inebriate. The chief enemy of these unfortunates is their intense egotism. It is rare to meet one who does not say that he can give up the habit any time, or after a brief period of abstinence will say that he could wade through a lake of liquor as deep as his chin and not drink a drop. Such remarks as these are usually precedent to a most disastrous relapse. The only way to overcome this egotism and the too great confidence of friends, is to teach that inebriety is to a great extent beyond control of the person's will. That the mind and body are diseased, and that it is necessary for the persons to place themselves under medical advice for the bodily ailments and under the best circumstances for aiding the feeble will.

Another matter that has served to obscure the discussion and proper understanding of this subject is that there is no well marked line of division between liquor taking and inebriety. One swallow does not make a summer, and one drink does not make an inebriate. In fact, some individuals may and do take liquor in moderate quantities for many years, without becoming inebriates. It is impossible to lay down any hard line on one side of which a man shall be said to be an inebriate and on the other that he has the drink habit. It would be desirable for our theories if Nature would follow our classifications and make clean cut distinctions. We can divide the whole world into inebriates and sober people, but we shall find all gradations, from the individual who takes three or four drinks a year, to the victim of the drink disease who is as hopeless and helpless in the presence of his malady as is the sufferer from epilepsy or hydrophobia. This want of division is not peculiar to inebriety, it is characteristic of insanity, and one of the chief difficulties in dealing with the legal control of the lunatic arises from the want of a dividing line between sanity and insanity, a difficulty that our judges have been attempting to overcome for over two hundred years. It is impossible to lay down any definite rule, but in a general way, where there is a distinct craving for alcohol, which is only partially restrained, or where we have unrestrained indulgence with the more constant phenomena of acute or chronic intoxication, or where we have the secondary effects of alcohol upon the tissues, we may make a diagnosis of inebriety. It is well understood that such division is but arbitrary, and the effects of alcohol in the milder cases is one of degree and not of kind. Still, a division must be made somewhere, and it would seem best to place it near the point where alcohol affects self control and civic relations.

The profession at large owe a great debt to the inebriate, and one that they appreciated too lightly in the past. It is rare that a patient presents himself directly for the alcohol habit; it is usually for some intercurrent affection or for the secondary results of the alcohol. As a rule, the symptoms are prescribed for, a few inquiries are made regarding habits and the patient is told to moderate, or stop his use of alcohol, and dismissed with a few added injunctions as to diet. In these cases the physician regards as a *cause* that which is in reality the disease (inebriety). It is the duty of the physician in every such case to make a careful inquiry into the family and previous history of the patient, the date of beginning of the alcohol habit, its cause if ascertainable, and finally the quantity, time and kind of alcoholic drinks taken. These, with an estimate of the condition of the nervous system and an examination of the internal organs, will furnish a guide for prognosis and the general indications for treatment.

I do not believe there is any specific treatment for inebriety nor that there is any drug or combination of drugs that will relieve the craving for liquor, except they are themselves intoxicants, or are like strychnia, atropia or other alkaloids, that when exhibited in very large doses produce a marked toxic effect. Not that these drugs are devoid of value when exhibited in proper doses, and under proper directions. They are most excellent tonics and restoratives, but when given in extraordinary quantities and particularly beneath the skin they may produce very profound disturbances in the nutrition of the nerve centers that may lead to insanity or the production of the more grave degenerations. Such drugs as Ext. Cocoa and the general nerve tonics are indicated but they are not to be given in doses that shall in any way make them substitutes for the alcohol that has been taken. Hot baths are useful, especially the Turkish bath where available; they tranquilize the nervous system and aid elimination. Chloral, the bromides and other sedatives are useful to procure sleep. These patients ought to be kept busy as much as possible with their treatment. Medicines should be given often, and in small doses and the baths frequently repeated. It is astonishing sometimes what a wonderful effect, a small bottle of a comparatively innocent drug will have in allaying the thirst for liquor, providing the patient is told with sufficient earnestness that it is given for that purpose. In a general way, the home treatment of inebriety, like that of insanity, is unsatisfactory. In the milder cases, good results may be achieved. In the more advanced cases, where the peculiar mental changes of chronic alcoholism have come on, it is better to send the patient to some institution. In this way, old habits and associations are interrupted and a more profound impression is made upon the mind of the patient than can ever be reached by the physician at home, be he ever so skilful.

In bringing this paper to a close, I am profoundly impressed with its fragmentary nature. I have made no attempt to go into the extensive and valuable literature with which, indeed, I am but imperfectly acquainted. I have simply endeavored to set down a few suggestions that have been the outgrowth of my experience with this class of cases. If it shall but stimulate the profession to a livelier sense of their responsibility in dealing with these unfortunates, it will fulfil the object for which it was written.

Dr. J. J. M. Angear: I have been very much interested in the paper just read. The great difficulty that I have realized in obtaining reliable facts from the literature upon this subject is that it comes from two very extreme sources, the liquor loving man, that is, the man who is the habit of drinking, and writes for the purpose of backing up his own habit. The other extreme is the man who does not think that alcohol is ever to be given as a medicine, and that all the crimes that were ever committed from Adam down to the present time have been done directly by the influence of alcohol. While we have such terrible extremes we are never going to arrive at the truth.

With reference to the disease as it was brought out in the paper, I think that we should all have that clearly defined in our minds. I have so far arrived at this conclusion, that *it is a habit* primarily. Habit begets a taste and the taste may be hereditary, and when a patient has gone far enough into this habit there must be a diseased condition of the brain as well as of the stomach, the lungs and the kidneys. The disease of the brain is manifest by psychical symptoms, hence it would come in the domain of insanity. As it has been stated in the paper that it affects the will and moral faculties, I believe that the time comes when the individual is entirely beyond redemption; I think that he is so far over the cataract that there is no power on earth that can save him, and whether there is any power in Heaven to save him is another question. It is too late to talk to him about the evil that he is doing both to himself and family. I think we may as well talk to a pair of old boots as to talk to an individual when he has reached this point, because he has lost his manhood, and he is lost, I was going to say, to all eternity. It now becomes a duty of somebody to put him where he cannot get alcohol in any form. Would it not be better to do this before he reaches this point, and thereby save him?

I have had an opportunity of watching these cases, particularly in Iowa, during the Murphy and Bonticue movement. The idea was brought out in the paper and I wish to endorse it, that these men were given to egotism. I have seen men get up in these meetings and brag—for I can call it nothing else—of how many times they had been down in the gutter, but now they had drunk their last drop of the infernal stuff. These men would talk loud and with great flourish and the probabilities are that shortly after these meetings they were in the same gutter that they depicted. They will get up in meetings, confess their sins, and then they are forgiven, so they say. They keep on doing this perhaps forty times a year. I have seen it so often that I fairly tremble when I hear men speak of how low down they have been, what dogs they have been, etc. I know such men are on the verge and they have not stability to prevent themselves from falling headlong over the precipice into a drunkard's grave.

Dr. F. C. Schaefer: In reference to the point of heredity, there is a great deal to be said. I remember one instance of a young man, who, after having tasted liquor, could not stop drinking until he found himself in the gutter. I knew his father quite well. He was a middle aged man, and was not a drunkard in early life. He had three boys born before he took to the drinking habit. They have been and are still sober men. After having been an inebriate for the greater portion of ten years, his wife presented him with another son, and this was the boy who became a drunkard. He was remarkably exemplary in character in every respect until he began to drink at the age of 25 years, and finally died a drunkard at the age of 41. Doubtless many similar instances might be related, but this case struck me very forcibly as having a practical bearing upon the question of heredity.

Concerning loss of will it sometimes seems doubtful if these men do lose their will power. They exert a wonderful will power over others in obtaining whisky, but there are people who may lose it entirely. I would not say it is not so. A sad case occurred in this city several years ago. The gentleman was a physician, and doubtless some of the members here were acquainted with him. He died at the age of 55, having been a drunkard for 20 years. He was said to have diabetes during his last illness. I called to see him a number of times in a social way. He had symptoms of gastritis, and I told him one day that he had no diabetes but that the glandular structure of his stomach had been ruined by the use of whisky. He said, "That is true, doctor." For about six months he did not take as much nourishment as a cupful of milk per diem in addition to one-half pint whisky. Finally, when his end was drawing near a neurologist was called in, who suggested that we had better cut off his supply of whisky. It seemed useless to do it at this time as the man was on the verge of the grave and could not live more than two or three weeks. "Well," said the consultant, "I think we had better cut it off," and I told him what the doctor had said. He then replied "Dr. Schaefer, if the devil was at the door beckoning me I would not stop drinking whisky," and he continued drinking until relieved by death twenty days later.

Dr. John D. Skeer: I have been under the impression that the constant use of alcohol changes the condition of the brain from a normal to an abnormal condition, which subsequently becomes the normal condition of the brain from the constant desire to use it, and the individual craves for alcohol just as much as a man craves for butter and milk or any other article of food. It seems to me that explains to my mind in a very satisfactory way the irresistible desire that men have for the use of alcohol.

Dr. Edward F. Wells: I would like to ask the reader of the valuable paper to which we have listened whether he considers drunkenness a common cause of insanity, as I understood that to be the tenor of a portion of the paper?

Dr. Moyer: Not inebriety. The use of alcohol is an important factor in [illegible] of insanity.

Dr. Wells: In this connection I wish to call attention to one fallacy in statistics relating to the cause of insanity. The etiological statistics of insane hospitals are usually made up from the original papers giving the alleged cause of the disease, and that alleged cause is that which is described by the next friend of the patient in his petition that the party may be declared insane. Such persons are usually not medical men, and the most obvious feature of the patient's habit is seized upon at once as the cause of his disease. If he hesitates as to the cause, the accommodating magistrate is very apt to say, "What is the cause of this? Does he drink?" "Yes, he was in the habit of drinking." Whereupon the case is put down as being due to drunkenness. If this is not the case, he will say, "Has the man met with reverses, or a mental shock of any kind?" "Well, yes," and then that is put down as the cause. "Has he met with an injury of the head?" "Yes. When a child he fell out of a dray and hurt his head," and this cause is assigned. Such cases are utterly worthless in a scientific point of view for the purpose of investigating the causation of diseases. Before it can be asserted that drunkenness is a cause of insanity, it must be proven that the disease exists in persons addicted to this habit in a distinctly larger proportion than amongst others, and this has not yet been done. Were drunkenness a factor of great importance in the causation of insanity, we would expect to find in countries where drinking is carried to extremes a much greater percentage of the disease than we find in those countries where it is not carried to an extreme. Statistics do not bear out this point. To be sure a great number of insane patients have been drunkards, and a great number of drunkards exist who are not insane.

Nine persons having found their way into one of the insane hospitals within a comparatively short period, following closely upon the so-called "bichloride of gold" treatment for drunkenness, we would naturally conclude that the treatment was the cause of insanity, because the proportion to the whole number treated is, comparatively, very large.

In regard to the management of drunkards. The treatment pursued by Dr. Keeley, at Dwight, I conceive to have one element of success in it, and that is this: Patients are brought together in large numbers, seven or eight hundred, and great enthusiasm is found to exist, and this enthusiasm is most [illegible] fostered. A patient going there must [illegible] n of the better class, inasmuch as the charges are such that people in the lower walks of life cannot get there. Such a man takes a stand in favor of reformation and temperance and it puts him on his guard, and his position is placed in jeopardy, so that when he returns, as he says "cured," his pride may hold him up longer than would the ordinary treatment at home. If that person were now surrounded by proper elevating influences and not thrown amongst old companions who were in the habit of inviting him to take a drink, he might have an opportunity of becoming permanently cured. In addition, were he given remunerative, responsible and laborious work his prospects would be greatly augmented. As a rule, however, I think Dr. Moyer's four cases of relapse are fair samples of the majority of cases that "graduate" at such institutions.

Dr. J. M. Patton: I have been interested in this subject of late and want to learn something from the general discussion, but I confess being much mixed on the subject. I have been unable to discover that alienists, who ought to know as to whether inebriety is a disease or not, whether it is hereditary, and the probability of its cure, know very much about it. The fact is they are puzzled as much as any other class of men. Take, for instance, the definition which Dr. Moyer quoted. He said it consisted in want of harmony of individuals with their environment. It did not seem to me that that covered the point. These men's surroundings are saloons and if they are not in harmony with them, I would like to know what they are in harmony with.

In regard to its being a disease, in the first place we have no definition that is reliable, and I do not think it is necessary for us to have any pathological condition. We recognize diseases of the brain in which no pathological changes can be demonstrated, and therefore I do not think secondary organic changes in the body which follow from alcohol have any more connection with the primary condition than if those changes were in the liver or stomach, which take place as a secondary result of disease of the heart for instance.

Then again in regard to its curability, we have all manner of claims for that. I do not believe any more than Dr. Moyer does that we have a specific in any one drug or any one class of drugs for its treatment. I think the question is a moral one after all; and yet in looking over the literature for the past two or three years, which has been quite extensive, as a general practioner who is seeking after some knowledge, I confess I have been unable to find much. I am just as undecided what to do and what to recommend these patients to do as I was before. I feel like condemning the want of energy shown by the alienists in discussing the effect of the various cures for inebriety on the public at large. Very few of them will recognize a scientific basis for the cures. I think it is on them that both the public and physicians do much depend for confirmation in this matter and the efficacy of the Keeley or any other cure. It is due to the profession and the public, that, if they do not believe in the methods adopted at various sanitories, they should openly condemn them.

Dr. Harold N. Moyer in closing said: It seems to me that considerable has been laid out in the discussion. Dr. Angear says that alcohol has been charged with all crimes since the fall of Adam. The Garden of Eden affair was not a case of inebriety, but one of serpent poisoning. He takes the ground that it is a habit, but does not define what he means by habit. A person may have a habit of getting up early in the morning; he may have a habit of staying out late at night. I would like him to tell us what he means by the word habit.

Dr. Angear: I should have done so if the President had not shut me off.

Dr. Moyer: I fear Dr. Graham has misapprehended some points in my paper. The original word disease was a broad term that later narrowed by modern medical writers, in the hands of such writers as Huxley, Darwin, Spencer and others the term again broadened, and the definition as quoted by Dr. Patton that disease was "a want of harmony between the individual and his environment," is generally accepted by the evolutionary school. I clearly stated in one sentence in my paper that inebriety was not a disease in the sense that pneumonia is, but this is true of some forms of insanity, notably paranoia. Inebriety is not a disease in the restricted use of the word. You remember that I said that one drink did not make an inebriate; but that where drunkenness affected the civic relations, or where one is helpless to resist the craving for alcohol or the peculiar mental changes of chronic alcoholism have come on, we should make a diagnosis of inebriety. That is not a hard and fast line. Many have delusions who are not insane. Many have mental peculiarities which only need to be exaggerated to become insanity, yet the law attempts to make a division somewhere. I attempted to lay down some sort of rule by which we could measure the use of alcohol and state where the drink habit passed into inebriety.

I have not seen the paper of Dr. Dana, which was referred to by Dr. Graham, but I know that anything that Dr. Dana writes would be valuable from a scientific standpoint, and I think I can agree with Dr. Dana as to the proportion of inebriates—one to seven hundred. I have thought a good deal over this matter and my own idea would be about one in every three or four hundred. There is a large number of men who drink who are not inebriates. Men die of hobnail liver who are in no sense inebriates. I agree with Dr. Wells that the etiological statistics of insanity are absolutely valueless as they appear in asylum reports. The cases mentioned were carefully studied and the sources of fallacy pointed out by him were excluded.

Dr. Frederick C. Schaefer reported a case, and exhibited specimen, of

ABSCESS OF THE LIVER FOLLOWING TYPHOID FEVER.

The case I have to report to-night is that of a colored man, aged 39 years, who was taken with typhoid fever on or about the 5th of last August. He desired me to treat him. Expecting to leave the city for my summer vacation in about three weeks from that time, I at first refused. He said he would like to have me take care of him until my vacation time, and then send another doctor. With this understanding I treated him for three weeks, the temperature running up to 103° F. at night, and 101° F. in the morning; the pulse ranged between 100 and 120. He had an average temperature of 101° during this time. About the 1st of September I went on my vacation, and Dr. Haven kindly took charge of the case. I saw the patient again some thirty days thereafter. He had at this time a higher temperature than ever, 105° F. Dr. Haven stated that the fever had run a mild course during the first three weeks of my absence, and towards the last week in September the man had chills, the temperature rose to 104° F., and he complained of more or less pain about the region of the liver. Dr. Haven after this was unable to see the patient, and Dr. Skeer visited him a few times. There was slight improvement for a few days, but at the end of another week he had chills again, with elevation of temperature and fever continued. One day the temperature ranged 102-3°, and then it came down to 100° F. For two or three days the temperature was normal, then it rose a degree or two again. About the middle of October, I concluded that an abscess of the liver had formed. There was great tenderness over the region of the liver, he had slight cough and marked dyspnœa, and from the latter part of September until this time the organ grew larger. Patient was nauseated and bowels constipated. I told his wife that her husband had an abscess of the liver; that an exploratory incision ought to be made, and had her speak to him about it. He objected. Feeling that they did not realize the gravity of the situation, I urged that another doctor be called in to see him with me, and if he agreed it was abscess of the liver I would open it with their permission. They called in Dr. Newman, who was their physician years ago. After making an examination, he came to the same conclusion, and said the proper thing to do was to make an exploratory incision to see if we could not drain it. The man refused to have it done at this time. For three or four days he refused, and said he preferred to die a "natural" death. During the latter part of October I felt it was wrong to treat him longer without opening the abscess; we called Dr. Skeer in consultation. He examined the case, and agreed with me that the patient had an abscess of the liver. We found dulness on percussion as high as the fourth rib. He still refused to be operated upon. During the first week of November, I told them I must operate or withdraw from the case. Dr. Curtis then treated him right along, and after another month or six weeks the patient developed ascites. The doctor tapped him and drew away a quart of ascitic fluid. On the 19th of last March they called me in consultation.

The doctor said the abscess pointed below the last rib at the side a week before this time, and with a mere scratch of the scalpel he perforated it. A gallon of pus was evacuated. On the 21st of March I made an autopsy, in the presence of Drs. Skeer and Curtis. We found an abscess on the upper surface of the right lobe of the liver. There was a cavity there that would hold two fists. We found that the liver was adherent to the parietal peritoneum some 3 inches below the last rib, where the abscess pressed upon the hepatic flexure of the colon. The liver had rotated upon its transverse axis forwards, so that the left lobe was thrown up under the diaphragm. It was much contracted, having evidently been forced up there, and the adhesions of the abscess wall to the parietes had held the right side of the liver down so that it rotated forwards, while the left lobe extended up under the diaphragm. The condition was somewhat different when the organ was distended with pus. The capsule of the liver was stretched. When Dr. Newman was with me I succeeded in passing an aspirator needle into the liver, but obtained nothing. He would not permit a second needling. I neglected to say that there was a slight jaundice. Our patient had always been a sober, industrious man, who never drank alcoholic beverages of any kind, and had never been sick before.

Suppurative Hepatitis.—Among the causes which give rise to liver abscess mentioned in different text-books are:

1. Traumatism.
2. Extension of suppurative, inflammatory and ulcerative processes from contiguous structures.
3. Emboli in the blood-vessels of the liver.
4. Echinococci.

To these, in the light of recent developments in pathology, I may safely add:

5. The arrest of pyogenic germs or their ptomaines, in the liver structure, conveyed there by the blood-vessels or the lymphatics.

It is true that the germs frequently constitute a part of an embolism, and many times are conveyed in this manner to the liver from some suppurative thrombus.

In this connection it will not be necessary to refer to traumatic hepatitis. The second cause may be simply alluded to. Broussais long ago claimed that gastro-enteritis was a common cause of the disease, the inflammatory process extending from the duodenum into the biliary ducts, from there into the liver. Although this was at one time regarded as the *fons et origo* of most abscesses of the liver, the ideas of the profession have undergone a change as to this theory; still admitting that abscess of the liver does occasionally develop in this manner. Cases have been reported of suppurative hepatitis having extended to the liver from suppurative peritonitis, perinephritis, also emphysema, inflammation of the vertebræ, colon, and perityphlitis.

A more frequent origin of hepatic abscess is traceable to suppurative inflammation of the mucous membrane of the gall bladder and gall ducts, and the presence of stones in the bladder or duct. The latter causing suppurative inflammation of the tissues in which they happen to be located, this inflammation is frequently followed by ulceration, with perforation and extension of the inflammatory process into the liver, by reason of contact with the latter viscus. The former process, suppurative inflammation of the lining of the gall bladder and duct (caused usually by the presence of stone), may lead to suppurative inflammation of the liver by developing thrombo-phlebitis, or by transmitting the pyogenic germs directly to the portal vein, for the veins of the gall bladder and ducts pour their contents into the portal vein. Again, a stone impacted in the ductus choledochus may, by pressure upon the portal vein, lead to the formation of thrombus in the latter. Geigel reported a case of this kind in 1890 (*Sajous' Annual*, 1890).

Probably the most common of all causes of suppurative hepatitis are emboli in the vessels of the liver: *a*, portal vein; *b*, hepatic artery; *c*, hepatic vein—the order of frequency being in the order mentioned.

Abscess resulting from phlebitis in the radicles of the portal vein, the hæmorrhoidal, mesenteric, pancreatic, duodenal, splenic, pyloric and gastric, including also the veins of gall bladder and ducts—this is self-evident. Diseases of the rectum have been a fruitful source of liver abscesses, *via* the hæmorrhoidal veins. It is a well established fact that in young children phlebitis of the umbilical cord has been followed by suppurative hepatitis. Ziemssen mentions a case of abscess of the liver whose source was traced through the pancreatic vein to an abscess in the pancreas. Burk found an infarct in the spleen which he conjectured led to the formation of suppurative hepatitis, multiple abscesses having been discovered by him in the liver. Ackerman found thrombi in the vena gastro-epiploica dextra, accompanied by hepatic suppuration. Libermeister (Ziemssen's Cyclopædia, Vol. ii,) mentions abscesses of the liver as a sequela of abdominal typhus. Virchow discovered (*Arch.*, Bd. 1) infarcts in the lungs from which he claimed putrid clots were formed in the pulmonary vein, fragments of which plugged the superior mesenteric artery, and metastatic gangrenous deposits occurred in the liver, brain and kidneys. Meyer (*Berl. Klin. Wochenschrift*, 1868, No. 42) found a similar condition from ulceration of the endocardium.

Emboli have been conveyed through the hepatic artery. (O. Weber, *Deutsche Klinic*, 1867.) By way of hepatic veins it is claimed emboli may enter the liver. Cohn made experiments to prove this by injecting fine wheat meal covered with Canada balsam into the jugular of a rabbit, then compressed the thorax, and at autopsy found particles of the meal in the finer twigs of the hepatic vein. General pyæmia from any cause, and thrombo-phlebitis from any point from the head to the great toe, may have among their sequelæ hepatic abscess.

Symptoms are not always well marked, and as they are given in our standard text-books, it would seem unnecessary to occupy your time in a rehearsal of them. I would, however, call your attention to three differential symptoms, or rather signs, mentioned by Cyr (*Sajous' Annual* of 1888), which he claims will sometimes expedite the surgeon's effort in locating the abscess. They are:

1. When the abscess is located in the front convex surface, there is dyspnœa in addition to marked pain radiating towards the chest and shoulders, jaundice being exceptionally present. (This sign was present in a marked degree in the case here reported.)

2. When the suppuration is limited to the central part of the organ, local symptoms are more or less absent, either of the liver itself or of the neighboring organs, and decided jaundice exists if the abscess is large.

3. If the suppurative inflammation is limited to the under concave surface, there is entire absence of the thoracic symptoms with, at the same time, stomachic troubles, especially uncontrollable vomiting; the pain radiating in a downward direction.

Dr. Cyr gave statistics of 563 cases. Fifty-five per cent. died without the abscess being opened; 14.9 per cent. were opened with the knife; 10.5 per cent. opened spontaneously into the lung; 7 per cent. opened into the peritoneum; 5.5 per cent. opened into the pleura; 1.9 per cent. opened into the colon; 7 per cent. opened into the bile duct; 3 per cent. opened into the vena cava; 1 per cent. opened into the peritoneum.

Dr. Ferron gave statistics of liver abscess treated by hepatotomy (*Annual*, 1888), 49, 10 deaths, of which 5 had multiple abscess. One was in bad general condition, having had a collapsed lung; 3 died of independent causes; 1 died of peritonitis on fifteenth day; 37 recovered, 70.6 per cent. —showing a difference of about 26 per cent. in favor of operation.

With this remarkable record before the profession, it would seem to be our positive duty to operate whenever possible, provided always that the abscess has been discovered before necessarily fatal complications have arisen, and while our patients have a reasonable degree of strength left to withstand the shock. These are the two operations recommended: Needle—aspirate; knife—hepatotomy.

Is it wise to use the needle through the parietal wall? I think in a small percentage of cases only, and those which form a prominent projection towards abdomen or below the last rib at side or back. If we have multiple abscesses, we may be led astray by successfully reaching one and failing to find the others. I would in most cases prefer exploratory laparotomy; then use the needle to locate the focal point if possible. With a hand in direct contact with the viscus, we are in a position to find the abscesses with far more accuracy and expedition. Having located the focal point, the most reliable procedure is hepatotomy, either in one or two operations. Tait's method with single incision recommends itself, as we thus have to etherize and terrorize our patient a less number of times. Should, however, plausible reasons arise for the extra precautions, it may be wiser to resort to the double operation, which consists in first cutting down to the liver and stitching it to the abdominal wall, and giving three to four days for adhesions to occur. Should we decide upon the single operation, we can do so as follows, according to Tait:

"*Operation.*—The parts being cleansed and the other preliminary steps taken, make an incision about 4 inches long over the most prominent part of the swelling, down to the peritoneum. All hæmorrhage is next arrested, and this layer carefully slit up. The liver is now recognized, and carbolized sponges or towels are carefully packed in on either side, so as to prevent any escape of fluid into the peritoneal cavity.

"The needle of an aspirator, or a fine trocar, is then thrust in, and the existence of fluid beneath thus verified. As the needle is withdrawn the liver is incised, and a finger quickly plugs, and then enlarges to 1½ inch, the opening made by the knife. Hæmorrhage, if free, is easily arrested thus, or by sponge pressure. Escape of fluids into the peritoneal cavity is prevented by the use of the sponges already mentioned, by an assistant keeping the edges of the wound carefully adjusted to the liver, and lastly, by the next step, which consists in hooking up the opening in the liver with the finger or forceps, and in stitching the edges of the wound in the liver to that in the abdomen with a continuous suture of carbolized silk. In inserting this, care must be taken to unite peritoneum to peritoneum, and to take up a sufficiency of tissue by inserting the needle well away from the edges of the wound. As the suture is inserted the sponges must be gradually withdrawn, and if the fluid escapes very freely it may be well to turn the patient over on his side. All handling must be of the gentlest. A large drainage tube is then inserted, and dry sal alembroth or iodoform gauze dressings applied."

Dr. J. B. Herrick: Dr. Schaefer has given us an excellent *resumé* of the subject of abscess of the liver and its etiology. As he has said, an abscess may be caused by traumatism, by extension of inflammation from surrounding organs, or by infection through the avenue of the bile ducts or of the circulation. Under the head of infection through the avenue of the bile-ducts, I do not think, however, that it is always necessary to assume a phlebitis in the radicals of the portal vein that run in the walls of the gall-bladder or bile-ducts. When, for instance, a gall-stone is impacted in the bile-duct, it causes sufficient irritation so that microörganisms traveling up the bile-duct find here a point of minor resistance, and a localized suppuration in the bile-duct is the result. And by direct extension this localized suppurative cholangitis may become diffuse and involve the bile capillaries. We may thus have by penetration of the wall of the bile capillary a suppurative inflammation in the parenchyma of the liver, and this without any phlebitis in the portal radicals.

Late investigations have shown that there are many abscesses of the liver that are accompanied by the *amœba coli*. Experiments and researches by Loesch, Hlava, Koch, and especially by Kartulis, of Alexandria, who reports some five or six hundred cases, and in this country by Osler, Councilmann and Lafleur of Baltimore, have shown that dysentery in one of its forms, is doubtless caused by an amœboid body to which the name amœba coli or amœba dysenteriæ has been given; and in abscesses of the liver that arise as a consequence of dysentery, the amœba has been found as well as pus producing microörganisms.

Kartulis is of the opinion that the amœba coli is not a direct cause of suppuration in the liver, but that it is the carrier of the pus microbe. His idea is that the amœba coli carrying with it pyogenic bacteria enter the portal vein, possibly by virtue of its amœboid movements, is carried in the vein to the liver, and excites there suppuration. Or a thombophlebitis occurs in the radicals of the portal vein, and a detached embolus containing the amœba and pus microbe is lodged in the liver. Councilmann advances the theory that an abscess of the liver may be formed by the amœba coli passing through the wall of the intestine, lodging in between the diaphragm and upper surface of the liver, there penetrating again the serous coat of the liver and exciting a suppurative inflammation in this organ. This theory he suggests to explain the frequent occurrence of abscess of the upper portion of the right lobe of the lung, the two occurring together in several of his cases as well as in numerous cases reported by other observers. The question as to the amœba coli and its relation to abscess of the liver, as well as to dysentery is an extremely interesting one and one needing still further investigation.

There was one point, as it appeared to me, not clearly enough brought out by Dr. Schaefer, and that is with reference to the diagnosis of typhoid fever in the case in question. From the report Dr. Schaefer makes, we have no proof post-mortem that the case was one of typhoid fever, and I am sure from the experience I have had in the County Hospital that an incorrect diagnosis in an abscess of the liver can very readily be made.

I well remember two cases that went from the wards to the morgue that had been treated for typhoid fever. In both we found abscess of the liver and not the slightest evidence in the intestines or glands of typhoid fever. In one case we could not account for the origin. In another there was abscess of the liver from gall-stones and suppuration in the bile-ducts and gall-bladder. It seems we have a right to ask for more positively conclusive symptoms of typhoid or post mortem evidences that typhoid was the original disease, and that there did not exist some other cause than this for the abscess of the liver.

Dr. H. N. Moyer: In the symptoms mentioned Dr. Schaefer neglected one which is of some importance, that is, the presence in the urine in these cases of peptones or some other substance which gives a similar reaction. Of course, in a general way, it is not by any means indicative of hepatic abscess. It shows that there is pus incarcerated in an organ, and where the products of bacterial infection are going on, it would be present in empyæma. But in these cases early diagnosis is a *desideratum*, it is not always easy to reach. In several of the cases I have seen, a diagnosis has been made much too late. This sign is one of some value.

Dr. Weller Van Hook: I wish to say a word or two in regard to the very interesting report of Dr. Schaefer. The principal point I had made up my mind to present was the one mentioned by Dr. Herrick in regard to diagnosis. The studies of the amœba coli in reference to its relation to abscess of the liver have dated back to the year 1875. The first case of abscess of the liver recognized to have been associated with the amœba was reported by Loesch in that year. Since the time of Loesch there have appeared extensive works by other investigators. Kartulis of Alexandria has established the idea that amœba was the cause of tropical hepatic abscess indirectly, i.e., through a primary "amœba dysentery." Massintin has claimed that the amœba is found in the colon in other diseased conditions, in ordinary acute and chronic diarrhœas and in typhoid fever as well. He goes so far as to report cases of typhoid fever in which he found amœba. Kartulis has contested his claim for having found amœba in the intestine in typhoid fever, on the ground that the diagnosis of typhoid was incorrect. So it behooves every one who publishes a case of abscess of the liver that has arisen in the course of typhoid fever to be sure of his diagnosis especially if a search has been made for the amœba coli. If we can have some statement in regard to post mortem findings in addition to those which Dr. Schaefer has given us, they may be valuable in reference to diagnosis.

The echinococci, mentioned as having been the cause of liver abscess, of course Dr. Schaefer referred to only as an indirect cause of suppuration; that is to say, by causing pressure atrophy of the surrounding parts the echinococcus cysts may become septic by opening up the intestinal or other tract infected.

As regards the action of the amœba coli in carrying the pyogenic microbes, the ideas in regard to the inclusion of these pathogenic bacteria and their transmission to the liver by the amœba, though very plausible and probably correct, do not find recent confirmation. Dr. D. Nasse (Archiv. für Klin. Chir., XLIII, 1, 1892), found in his careful study of a case of liver abscess no evidence that this was the case.

It cannot be sustained that gall stones are a very common cause of hepatic abscess. Gall stones do result in the formation of empyæma of the gall bladder. A far more common cause of liver abscess is the embolic one. According to the statements of Orth, a very large majority of the cases of non-tropical abscess of the liver are due to embolic processes.

It is interesting to note that Kartulis has succeeded in cultivating the amœba, although he has only once succeeded in obtaining a pure culture. Experiments upon cats developed a typical inflammation of the large intestine with characteristic ulcers in which the amœbæ were found on examination of microscopic sections.

Dr. J. M. Patton: I would like to ask Dr. Moyer why he considers peptonuria a special sign of the presence of pus. According to the theory advanced by Koettnitz in regard to the etiology of leucocythæmia, peptonuria in that instance occurs because there is a failure of the natural process of transforming peptones into various forms of albumin, or the globulins, which has been established by Hofmeister, and that transformation not taking place, the leucocytes, which are abundant in the mucosa of the intestinal canal, carry into the blood a large proportion of free peptones, and therefore peptonuria is simply a symptom or an evidence of leucocytosis. If that is a fact, I do not see how it should be received as an evidence of pus, because leucocytosis need not necessarily mean a tendency to the formation of pus. Is it a fact that the presence of pus in the body is shown by peptonuria with sufficient certainty to warrant our accepting it as a symptom of pus formation?

Dr. Harold N. Moyer: The presence of peptones is not constant where pus is incarcerated in the body, but it occurs with sufficient frequency to give the sign some value in such an obscure disease as hepatic abscess. Where we have some symptoms pointing indefinitely to this condition, it might exclude other things. There is some question as to whether this reaction is due to peptones. The reaction I mean is obtained with picric acid. The albumin, if any, is precipitated by heat, and the urine is overlaid with a saturated solution of picric acid. If a cloud appears at the point of contact that does not clear up by gently heating, I regard peptones as present. It makes little difference whether it is a true peptone; the main thing is the reaction.

Dr. Patton: Does that reaction obtain in cases of incarcerated pus?

Dr. Moyer: Yes, I think it does. I have obtained the reaction in a number of my own cases, but my experience has been so limited that I am largely basing my remarks on the literature of the subject.

Dr. Angear: I would like to ask Dr. Schaefer if he noted anything peculiar in the fæcal matter? I will simply state my reason for asking that question. I have been somewhat interested in the study of the function of the liver. With our idea of the amount of liver substance that must necessarily be destroyed in this case, we should suppose that there was a less amount of bile thrown into the alimentary canal, and there should be some evidence of disturbed condition of the fæces, such as, for instance, fermentation. We are taught, and have reason to believe, that the bile prevents fermentation, and that very frequently we have diarrhœas of a yeasty character, that we ought to conclude is evidence of lack of bile thrown into the alimentary canal. The profession, from time immemorial, have been looking into the chamber vessels for evidences of bile, and if they had dark fæces it is bile, they thought, when in fact the color of the fæces comes from the large intestines, and not from the liver. In looking over many works on diseases of the liver, I do not find the clay-colored or white stools, nor the frothy diarrhœa, spoken of as often as we might expect in diseases of the liver—hence my reason for asking the question whether there was anything peculiar in the fæces noted.

Dr. F. C. Schaefer, in closing the discussion, said: With reference to the point raised by Dr. Moyer, I will say it was not my intention to give all of the symptoms of liver disease as they are mentioned in our numerous text-books, and do not wish him to understand that I ignored the symptom he mentioned by any means. It has some bearing on the diagnosis.

In reply to the remarks made by Dr. Herrick concerning the diagnosis of the typhoid fever, that is one of the most important points, and should have been dwelt upon a little more fully. I remember distinctly that this man had the usual symptoms of typhoid fever, with the exception of diarrhœa. Of course, we have typhoid fever without diarrhœa. There was marked tenderness in the right iliac fossa, great tympanites in a very short time. There were petechial spots, although it was difficult to define them accurately, on account of the color of the skin. The man had headache and bled from the nose—which, however, are symptoms of liver disease as well. The course of the fever was typical of typhoid, with the usual variation in the morning and evening temperature. The marked chills which occurred six or seven weeks after the onset of the fever, were indicative of some pathological change going on in the body which might have been secondary to the typhoid; at least, one would naturally look for complications coming on at that period.

I was positive in reference to the diagnosis, and do not think Dr. Skeer doubted the diagnosis when he saw the case, nor did Dr. Haven. It was with the utmost difficulty that we could make an autopsy. The intestines were of a milky-white color, almost bloodless. In the abdomen I felt some large mesenteric glands; a few of them presented nodules. I looked to the veins of the mesentery in addition, but did not see any enlargement or feel any hardness of them, and my conclusion was that the case was one of septic abscess of the liver, that the germs producing typhoid were conveyed directly through the venous circulation to the liver. I could not find any other explanation for it. There might have been originally multiple abscesses, their walls having broken down, and formed one large cavity.

With reference to amœbæ mentioned by Dr. Van Hook, seventeen or eighteen years ago that theory was advanced. Examinations were made in tropical climates where dysentery was common, and it was claimed that they were the cause of hepatic abscesses. We are apt to have these conditions more in tropical than in other climates.

I am positive that the symptoms of typhoid were as marked as in any case ever treated by me, with the exception of the absence of diarrhœa.

Dr. Graham: How early did you make the diagnosis?

Dr. Schaefer: I made it on the second day. The man came down gradually; he had a languid feeling a few days before, and when I came to examine his abdomen, it was extremely tender on pressure in the right iliac fossa, and as I pressed my ear down I heard the usual gurgling. There was *no hepatic tenderness* until the sixth or seventh week. The tongue was heavily coated from the onset, it was dry; there was constant thirst—in short, the patient had all of the general and most of the special symptoms of typhoid fever.

With reference to the question asked by Dr. Angear, I noticed that late in the course of the disease the stools were slate-colored at times. No diarrhœa. Earlier the stools contained mucus.

Dr. Angear: They were not white or clay-colored?

Dr. Schaefer: No. The abscess did not involve the entire structure of the liver while he was in my care. There was anasarca during the seventh or eighth week, and during the third month the patient was tapped by the physician in attendance for ascites, and a quart of ascitic fluid removed. The abscess was not opened by this procedure.

DOMESTIC CORRESPONDENCE.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Springfield, Mass., April 25, 1892.

I enclose copy of resolutions adopted at annual meeting of Hampden District Medical Society, held in this city Wednesday, April 20. The district society is one of the sub-divisions of the Massachusetts State Society. I also enclose comments of the lay press regarding same.

There is no question what the old and influential Hampden district medical society thinks of Dr. Keeley and his bichloride of gold cure. At the annual meeting, this week, resolutions were adopted by an almost unanimous vote, referring to the board of censors for action on the conduct of a member of the society, Dr. A. R. Rice, who has removed to Lexington to take charge of the new Keeley institute in that town. The utter contempt of the "regulars" for the Keeley "cure," which they declare is no secret, having been used for years, and the indignation provoked by the "degrading" act of a regular physician in associating himself with Keeley, are told as plainly in the following resolutions as the English language can make them. It will be seen that the society calls for a committee which shall recommend for expulsion any member whom it has found upon investigation to be using the bichloride "cure" or having anything to do with it.

Being the first official notice of the Keeley method by a Massachusetts medical society, if not the first by any medical society in the Eastern States, this thundering denunciation comes like a thunderbolt from a clear sky, and will be an eye-opener to thousands in this city and vicinity, which has already furnished not a few patients to the Keeley institute at White Plains, N. Y. In case the condemnation is warranted, it is exceedingly timely, and the conservative old "Hampden district" society will have the gratitude of the community. It is quite possible that the occasion of this action was not alone Dr. Rice's move, but the effect which the bichloride treatment had on a well-known gentleman who died in this city a few weeks ago after a season at White Plains. The resolutions gain added significance when it is known that the meeting was the largest in attendance for several years, and the vote for adoption was almost unanimous. Following are the resolutions in full, which were referred to the board of censors for action:

Whereas, according to common and newspaper report and upon information and belief it is known that a member of this society and fellow of the Massachusetts medical society in regular standing, has, by associating himself with one of the most notorious impostors of this century, in the application and use of a remedy for the cure of inebriety, called "bichloride of gold," and whose exact composition it is pretended is known only by, and is the sole property of, a certain individual, and

Whereas, no such stable chemical combination is possible, and the substance actually used with so much secrecy and profit to the proprietor is and has been employed in suitable cases for years by regular physicians, who well know its limitations and dangers, and

Whereas, by associating himself with a regular physician this pretender hopes to gain prestige, and the quasi-indorsement of the regular profession, thus enabling him to delude the public, and

Whereas, the association of a regular physician in such a capacity is calculated to injure the public and is degrading to those who are in fellowship with such physician, and recognizing that "naught but evil can finally result from trifling with moral or physical facts, and that it is better to cure rightly and really than wrongly and delusively," and that by the "humbuggery of secrecy, delusion and hypnotic suggestion," a far less number will, in the end, receive benefit, and

Whereas, it is the opinion of the members of this society that the use of the drugs, in the manner employed, for the cure of inebriety by the aforesaid impostor, produces a cerebral stimulation with intellectual disorders which are sometimes quite serious, together with other grave nervous troubles, themselves constituting a form of inebriety frequently leading to insanity and suicide, and a lowering of vitality rendering the patient less able to resist and recover from ordinary diseases, and

Whereas, in those cases of inebriety claimed to have been cured by means of this pretended secret method of treatment, it is our opinion that such cures resulted not *because* of said treatment, but *in spite* of it, and there seems little doubt that hypnotic suggestion played an important part in effecting said cures, and it is our opinion that in all of the so-called "cures" the result attained could have been better secured by improving the moral condition of the patient, by the use of tonics or hydrotherapeutics, regulating nervous action, and by attention to the digestive tract, without subjecting the patient to the dangers of another form of inebriety, and without the element of secrecy. It is, therefore,

Resolved, that this society hereby directs its president to refer this subject to a proper committee who shall, before the next regular meeting, ascertain if any member of this society has identified himself with the manufacture, sale, distribution or use of any secret remedy, contrary to the code of ethics under which this society is organized, and if so, that such member or members be recommended for expulsion from membership in this society at said next regular meeting.

A. O. Squier,
342 Main St. Censor Hampden Dist. Med. Soc.

BOOK REVIEWS.

The Hydriatic Treatment of Typhoid Fever, by Chr. Sihler, M.D., Ph.D., Professor of Histology in the Medical Department of the Western Reserve University; formerly Fellow of the Johns Hopkins University and Assistant in the Biological Laboratory. Cleveland: Published by the Author.

Dr. Sihler has appeared before the profession before, as an advocate of the methods of Brand, in the treatment of typhoid fever. He certainly deserves great credit for his earnestness, but he is certainly misinformed as to the stand which the American profession has taken with regard to the treatment of typhoid fever by cold water. The method is well known to them and thoroughly understood by them, and if it has not obtained the extensive use which Dr. Sihler thinks that it ought to have, the reason is to be found in the peculiar practical nature of American physicians. The severely logical arguments of Dr. Sihler, which are too rigid to reach the whole truth in so flexible a subject as medicine, appeal more to the German than to the American mind. The exceedingly practical nature of American physicians, and their actual success as practitioners, ought to show Dr. Sihler that there is something more in medicine than the German philosophy yet dreams of. As a careful and faithful report of what has been done by Brand and his followers and of the possibilities of the hydriatic treatment of typhoid fever, the book is to be commended. Its perusal will repay any physician, and it is to be hoped that its circulation will be wide. The book is blemished by numerous typographical errors, and by some linguistic slips which betray the author's nationality, They do not, however, in any way diminish the actual value of the work.

Guy's Hospital Reports. Third series, Vol. xxxii. Edited by Drs. N. Davies-Colley and Wm. Hale White. 8 vo., pp. 369. London: J. & A. Churchill. 1891.

This presentation of the work done at Guy's is equal to the best of its series. It opens with a memorial note regarding the late Sir William Withey Gull, M.D., whose name appeared so frequently in the earlier volumes of these Reports. Gull's name was identified with Guy's Hospital from his earliest student days. Dr. Hale White's contribution on pernicious anæmia is based on the doctrine that this is a disease essentially distinct from and marked by the absence of the ordinary causes and concomitants of symptomatic anæmia. The proportion of recoveries among the cases treated at that hospital has been small. Not a few of those discharged cured have afterwards returned for further treatment, and some of these have died in hospital. Two cases, kept under observation a number of years, have not relapsed, and may be recorded as cured. Dr. White also writes on malignant diseases of the liver. The other editor, Dr. Davies-Colley, treats of malignant pustule, and his employment of ipecacuanha, internally and externally, with five successes in that number of patients; the neck was involved in three of these individuals. Dr. Golding Bird has a paper on congenital wry-neck, with remarks on facial hemiatrophy. Mr. A. H. Tubby writes on the pathology of acute infective periostitis and necrosis of growing bone. This is the report of investigations carried on in the workroom of the Royal College of Surgeons and the Leipsic Pathological Institute. Dr. James Goodhart gives one of a series of lectures on the pathology of cardiac bruits. Dr. J. W. Washbourn reports a case of glanders, with the results of experiments in inoculation and cultivation. The same author is joined in the contributions of the anatomists of the Hospital, and with Mr. Jacobson and Mr. Percy Evans in their antiseptic and antituberculous experiments. Mr. Clement Lucas has a case of uncomplicated fracture of the coracoid, and a study of that lesion. Dr. Goodall treats of chorea and compression paraplegia. The usual lists and routine information close the interesting volume.

Washing the Hands.—For washing the hands previous to making vaginal examinations Prof. Parvin uses and very strongly recommends sapo viridis and sand. The sapo viridis gives a good lather, and the sand by mechanical action leaves the skin of the hands soft and in excellent condition for examination. This method is in general use in Germany, and since its introduction midwives have been required to wash their hands in this manner, and the mortality in obstetrical practice has been considerably reduced.—*Weekly Medical Review.*

Monobromide of Camphor for Spermatorrhœa.—The *Medical Summary* says: The monobromide of camphor has been successfully used in the treatment of spermatorrhœa, where a host of the usual remedies had been administered with no satisfactory results; finally the monobromide of camphor was given with prompt effect and perfect cures.

Camphoric Acid in Acute Coryza.—A cotton-wool tampon charged with a 2 per cent. solution of camphoric acid, and introduced into the nostril, gives rapid and permanent relief in acute coryza.—*St. Louis Clinique.*

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SATURDAY, MAY 7, 1892.

FEES AND FEES.

Our attention is directed to a suit in a neighboring city brought by a couple of attorneys against the receiver of a defunct National Bank for professional services rendered in making certain collections. The professional labor was not claimed to be especially onorous, or as taking up a special length of time, but for the service a bill was rendered for $25,000. This the receiver declined to pay, hence the suit for that amount. The plaintiff summoned other barristers to testify as to the value of the service rendered. One testified that the bill was moderate, and should not have been less than $30,000. Another that the fee was low and should not have been less than $40,000. Some time ago the President of this same bank was tried for misappropriation of the funds of the bank, and to save himself a penitentiary sentence employed a couple of attorneys who required a $5,000 retainer, and $10,000 more before the case should be given to the jury. And we never heard that in either instance there was another of the legal profession ready to step on the witness stand and say the lawyers placed too high a value on their services.

Notwithstanding the adage that comparisons are odious, we will tell of a recent case in this city in which the value of medical services are called in question: The case was one of malignant diphtheria, the patient the only son of a wealthy man whose business is mainly conducted on the Board of Trade. The case was so severe as to indicate an almost certain fatal termination. To the father there was presented a case of loss or gain, the life of his only son was at stake. In his distress money was not thought of as a consideration, but of only one thing was he determined upon, and that the securing the very best skill to be found in the medical profession of Chicago. We do not know how he learned who one of the most experienced physicians was, but we will, without hesitation say he was properly directed to a gentleman whose skill is not surpassed in this or any other city, and whose observations and operations in this class of cases are so numerous and successful, as to place him in the very first rank among physicians who have made children's diseases a specialty. The man of means sent for the doctor of skill and repute, the case of desperation was placed in the doctor's hands; by continuous, watchful and most anxious service the life of the only boy was tided through the malady and restored in health and promise to the Board of Trade man.

In due time the physician sent in his bill for services rendered, not for $25,000 or $15,000, but for $2,000. The account was ignominously cast in the waste basket. Another bill was sent. The man with the large bank account characterized it as an attempt at robbery, and began sending around to different physicians to inquire the usual charge for performing the operation known as intubation, telling nothing of the particulars pertaining to this special case; fees were named. The miserly man of the large bank account felt that he had triumphed, here were the rates charged by other men for such operations, and he would pay no more. An arbitration was proposed, Moneybags would agree to this if he were allowed to name the arbitrator, but would not agree to allow the doctor to name one. Oh, my! it makes us weary to write of such a character. We will only say of him that he is now off in California traveling with that son whose life he said was not to be valued according to a money standard, but the doctor who saved him was to be rated at the salary of one of his clerks, and as an employe. In his opinion, only this and nothing more.

This is not a case for compromise on the doctor's part, but one for settlement either in court or by arbitrators. If by the latter, the men chosen should be of unquestioned standing in their own guild, and who are capable of appreciating the compensation which should follow the labor and continuous study of more than two decades, with its burning of barrel after barrel of midnight oil in persistent endeavor to acquire the skill, the necessary and coveted "know how," that is available on such an occasion as this, in order to save a hopeful boy from a narrow resting place in the city cemetery.

The bill was moderate and just, it should have been paid without a murmur, and accompanied by expressions of profound gratitude for a service that cannot be rated in value by a money standard. There is not a practicing physician in this city or in this land who is not personally interested in the payment of this and every other similar bill for professional service. It is by our service to others that we earn a livelihood, if such service is poorly compensated, it directly affects the current fees of every other man, and the lower the fees the lower the standard of the local profession in every other particular. Low fees mean a shoddy profession, low morals, with shallow attainments and the driving of bright minds into other callings. High fees mean culture, refinement, the highest attainable skill, self respect and laudable ambition.

Taking a retrospect of the past and a peep into the future: the man who is and would be known as reputable in his profession as a physician, should place a value on his services commensurate with his expenditure of a little fortune in money and the time and study of many years in attaining a skill and knowledge that will enable him to relieve painful suffering, cure diseases, prolong life, and direct such use of prophylactic measures as will prevent sickness.

SULPHURING FRUITS AND VEGETABLES.

Within the past few months, our attention has been directed to the process of sulphuring fruits and vegetables in order to beautify their appearance, by making them of a uniform light color, and removing indications of decay, all of which enabled the grower to place upon the market a commodity from which he could derive a much higher price.

From a commercial standpoint, the process transformed a nature's number two, three or four article into a more salable number one. The adulteration is comparable to the use of shoddy in the making of all wool and a yard wide cloth that won't shrink, and of cattle hair in the manufacture of warranted all long wool body brussels carpets.

There is, however, a very material difference. The deception in the sale of the shoddy all wool cloth that is a yard wide and won't shrink, only involves the purchaser in a financial loss in the item of wearing apparel, and so of the housekeeper in her parlor furnishing of warranted all long wool body brussels that is largely made up of cattle hair, her expectations of wear and retention of color are sadly disappointed, only this and nothing more, except a shaking of confidence in the word and integrity of the merchant.

In the case of the sulphured fruit there is, no doubt, in most instances, a deception practiced upon the innocent purchaser. This is quite bad enough, but there goes with the beautiful fruit a material amount of poison in the form of sulphate of zinc, sufficient in quantity to injure the health of those who partake of such fruits and vegetables.

None of these processes for preserving fruits are harmless, but of their dangerous nature the people are not informed, and for such reasons, the laws now pending in Congress, and known as the Pure Drug and Food Bill, and the one creating a Cabinet officer of Public Health, should be pressed to their passage. We have published copies of both these Bills, and hope the members of the American Medical Association and of all the State Societies are wide awake to their importance, and the necessity for active efforts in securing their enactment into laws.

THE DETROIT MEETING.

The local profession of Detroit are in harmony, and, as one man, united in their determination to make the ensuing meeting one grand success; in fact, that is already assured. The city itself is one of the most beautiful on the continent, and the first week in June is just about the best time in the whole year to see it to advantage. There will be neither sultry heat, nor blizzard cold, while the hospitality of the people is not second to those of any other city.

The accommodations are excellent, the hall and rooms for Sections are adjacent, while the hotels are all within convenient distance.

The Section officers report that the program cannot be improved, and that it will fairly reflect the progress of our art during the year that is past.

UNTOWARD EFFECTS FROM THE SALICYLATE OF SODIUM.

DR. F. W. MANN reports in the *Medical Record* some remarkable psychical symptoms following an overdose of this drug. The patient, a laborer of German birth, required treatment for a subacute rheumatic attack, for which was ordered a mixture containing two drachms of the salicylate in four ounces of mint water. This was to be taken in teaspoonful doses every second hour. Like many another German of his class, the patient thought that the more rapidly the remedy was ingested the more speedily the cure would be accomplished; he proceeded to swallow the whole four ounce mixture in the course of four hours. As the result of this overdose the patient began to have hallucinations, especially delusions of persecution. During the evening of that same day he became so troublesome to his friends that they felt constrained to call the aid of the police. The patient had to spend the night in a cell. The expectation was that the man would be consigned to a lunatic asylum on the following day. The history of the excessive dosing with the salicylic mixture having been taken into consideration, the man was sent to a hospital. During the next four days, the patient comported himself very much like a case of delirium tremens. Visual and auditory hallucinations possessed him. He refused all food, giving as his reason that he was soon to be hanged and that therefore it was useless to take nourishment. He gazed in a mirror and promptly struck it a blow with his fist, and broke it on account of the demoniacal visage which his own reflection brought to view. After this, physical restraint became expedient, and the man was kept in his bed. His attention was solely and constantly given to the thought of freeing himself from persecution and constraint. He was not coarse of speech nor rough in action. When spoken to he responded pleasantly. Respiration was not notably depressed, pulse 130. At the end of the fifth day the delusions gradually passed away and the man returned to his usual state of health. His rheumatism had disappeared also. The man will be more heedful hereafter to follow the instructions of his physician. Hallucinations are a not infrequent result of salicylism, but they have not been, as a rule, so long continued as in this instance with an overdose of the drug no greater than that here reported.

STATE MEDICAL SOCIETIES.

It is a matter of much gratification to note how generally the State societies are taking action on subjects brought before the American Medical Association at the last annual meeting. This is particularly the case with regard to petitions to Congress to enact the Bill now pending pertaining to the Cabinet Officer of Public Health.

The necessity for such an officer is so generally apparent that the proposition meets with universal commendation, where and whenever it has been broached in a medical society meeting.

The labors of **Dr. C. G. Comegys**, Chairman of the Association Committee, have been untiring, and should be crowned with the success they so richly deserve.

The manner of taking up this subject by the State Societies and making the cause their own, aptly illustrates the possibilities of other important measures being furthered to a successful issue by a more compact and practical unification of the State Societies as actual branches of the American Medical Association. If the State Societies sustained such a relation, any measure pertaining to the weal of the medical profession, or to the betterment of the sanitary and hygienic conditions of the people, could emanate from any one of those organizations, or from the American Medical Association, and through the latter, secure the coöperation of all the branches, so that in this way the voices of more than fifty thousand physicians would be heard.

* * * * *

The trend of men's thoughts in our Republic is in the channel of unification in order to accomplish the greatest measure of success. This is exemplified in the persistent efforts of men and corporations engaged in similar undertakings, or industries; combinations, trusts, pools, systems, associations and unions are formed. This is for the purpose of lessening both competition and cost of production. It also enables the managers of such unions to obtain grants and franchises with the least possible friction.

A corresponding practical unification of the State medical societies as parts of one federation in the American Medical Association, would make possible many desires for advancement that now seem to be and are visionary. These are: a uniformity of many of the State laws, particularly those pertaining to sanitary conditions, immigration, medical education, registration of physicians, adulteration of foods and drugs, care of the defective and criminal classes, etc. These are subjects that should naturally come under the supervision of the medical profession.

Furthermore, in all these matters the people will become better informed, and will cheerfully seek the guidance and direction of those whose lives are given up to a study of these subjects, for they are a necessary segment in the Nation's wheel of political economy.

RHEUMATISM, HEART DISEASE, AND CHOREA.

The inter-relations of rheumatism, heart disease, and chorea, have been made the subject of a very interesting investigation by **Walton** and **Vickery**.[1] These gentlemen approached the subject with *a priori* feeling that the relations generally supposed to exist between these several conditions, were probably incorrect, but their results have confirmed, substantially, the current opinion.

Their study is based upon an analysis of 76 cases of chorea, which they saw together, and which have been studied with unusual care. They excluded chorea apparently due to hysteria, and habit chorea, as well as chorea due to gross organic disease of the brain. Careful distinction was made between functional and organic heart disease, and the diagnosis of cardiac lesion was not based upon a single sign, but upon the entire group of objective symptoms—"the size of the heart, the presence or absence of a thrill, the locations of the murmurs heard, and the direction in which they were transmitted, the accentuation or non-accentuation of the pulmonic second sound, and the evidences of venous stasis. As regards the question of rheumatism, vague pains were not included under rheumatism, even when situated in the joints, but the history of 'pain, heat, redness, and swelling,' was carefully sought, and only those cases included under rheumatism where the history was sufficiently accurate to render probable the existence of true rheumatic inflammation."

Their results may be classified in percentages as follows:

1. No possible rheumatism or cardiac disease either functional or organic	47.37
2. Rheumatism without heart disease	3.94
3. Rheumatism with irregular heart	6.58
4. Vague pains without rheumatism	17.10
5. Both heart disease and rheumatism	13.16
6. Organic heart disease without rheumatism	14.47
7. Functional heart disorder	14.47

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[1] Amer. Jour. Med. Sciences, May, 1892.

The authors further state that their statistics show a total percentage of organic heart disease of 27.63, and a total percentage of rheumatism of 23.68, but this latter figure apparently omits item 2 of the above table, while including items 3 and 4.

Among their conclusions are the following:

1. Neither rheumatism nor heart disease is essential to chorea.

2. The preponderence of evidence points toward the conclusion not only that rheumatism and organic heart disease conjointly appear more frequently in the choreic subject than can be accounted for by coincidence, but that the same is true of each of these affections separately. It follows, therefore, that (*a*) rheumatism predisposes to chorea, and (*b*) organic heart disease has the same tendency.

4. There is a large class of functional cases (chorea), largely reflex, and fostered by circumstances, tending to produce functional symptoms in general.

5. The pathological connection between rheumatism and chorea, excepting in the cases where emboli are produced by accompanying endocarditis, is still obscure; probably no one theory is applicable to all cases.

6. The mechanism by which the peculiar phenomena of chorea are produced is unknown.

In defining accurately their lines of research, the authors have done well, as they give figures which can be satisfactorily compared with similarly made observations by others. But in their conclusions they use words without indication of the special limitation which they have previously put upon them, and which would be misleading if considered apart from these limitations. Chorea being essentially a disease of childhood, its relation to the rheumatism of that age is the problem to be considered. Pediatricians are quite well agreed that true rheumatism manifests itself in childhood in a very different shape from what it assumes in adult life. The disease is certainly milder in childhood, and the joint symptoms in particular are less marked. Therefore to develop the relations of chorea to rheumatism of the adult type in childhood, is to introduce a serious error.

We cannot admit, therefore, that the first conclusion of the authors is established. The authors have reviewed a great deal of literature in the preparation of their article, but we regret that they have apparently overlooked the highly interesting and valuable monograph of Cheadle on "The Rheumatic State in Childhood."

In this little book, Cheadle shows very conclusively that the three prominent symptoms of the rheumatic state, viz., the joint affection, cardiac disease, and chorea, may occur, and recur in any order, so that it is unjustifiable to call chorea a sequel of rheumatism or cardiac disease although that is the common order of manifestation. The latter part of the second conclusion of the authors, is therefore open to objection.

How large the class, to which they refer in their fourth conclusion may be, is open to considerable discussion.

Unfortunately the statistical method is not adapted to settle the question of the relation between the three phenomena under discussion. At best it can merely show that some relation between them does exist, but the extent, as well as the kind of the relation, must await the discovery of the common factor which binds them together.

VENEREAL STRICTURE OF THE RECTUM.

Dr. C. B. Kelsey, in the *New York Medical Journal*, March 26, treats of some of the rarer diseases of the rectum that result in stricture or occlusion. He exhibited to his class a case of chancroidal ulceration around anus and within rectum. He regards this ulcerative condition as one of the occasional sources of so-called syphilitic stricture. It tends to confirm the classical argument of Mason, who, nearly twenty years ago, called attention to the frequency of rectal stricture due to chancroid, although generally known as syphilitic. Venereal stricture seems very often to have a doubtful causation, for the reason that the practitioner is unable to follow up the changes that occur. We sometimes see specific vaginitis assigned as a probable cause of the trouble in females. There are more cases of venereal stricture among females, and they are apt to be refractory against specific remedies. The exact mechanism of this form of stricture will be better understood after the consecutive histories of a considerable series of cases shall have been recorded and studied. This point is well to be borne in mind that a certain proportion of patients is strangely insensitive to rectal lesion. So that a case of alleged syphilitic stricture cannot fairly and definitely be set down to that etiology, if there has been an incomplete examination of rectal region at the time of the initial lesion. It is even asserted that patients, having rectal stricture, have not known it, but have merely surmised that they had some form of dysenteric trouble. While not denying the possibility of a genuine syphilitic causation for some of these strictures, there still remains the fact that neither mercury nor potassium iodide have had much if any restraining or remedial effect upon them, so that, in the present status of our knowledge, the term venereal stricture, rather than the more familiar term "syphilitic," should be the saving clause of our nomenclature; it is probably less misleading than the other and contains within it a suggestiveness that an early and full history of these cases is desirable.

QUESTIONS FOR CONSIDERATION.

The Committee appointed at the last meeting of the American Medical Association, to consider the best means for promoting the prosperity of the Sections of the Association, will hold an adjourned meeting in the Hotel Cadillac, Detroit, Mich., June 6, at 3 P.M.

The Committee would esteem it a favor if each member of the Association would communicate in writing his or her views concerning the best measures for promoting the development of the Sections. Such communications may be sent to the Chairman of the Committee, John S. Marshall, M.D., 9 Jackson St., Chicago.

1. Ought the Sections to occupy a more important place in the conduct of the affairs of the American Medical Association?

2. If they should, what is that place?

3. Do the Sections need an Executive Committee, like that possessed by the Section on Ophthalmology, to look after their individual interests and development?

4. Should the Section Executive Committee be formed of the ex-chairmen of the Sections, have a term of office of three years, the yearly vacancy being filled by the retiring chairmen?

5. Should each Section have yearly reprinted from THE JOURNAL its papers, discussions, list of membership, with the past and present officers, and its rules and regulations for the conduct of its affairs?

6. Should each Section have an annual dinner for the promotion of personal acquaintance among its membership?

7. Should the Sections have more time for the reading and discussion of their papers? If so, how much more time?

8. Should the Sections have any voice in the election of the officers of the general Association, in the selection of its place of meeting and in the general conduct of its affairs?

9. If they should have such a voice, in what manner could they use it to the best interest of all concerned?

10. Would it be wise to organize the Executive Committee of the Sections — if so formed — into a general Business Committee of the Association, to whom should be referred all business matters needing consideration by other than existing committees, and to whom should be delegated the nomination of the general officers of the Association, the selection of the place of meeting, etc.?

11. Would it advance the interests of the Sections to so arrange matters that, with the exception of one hour, the entire working day of the Association meetings be given to Section work? the excepted hour to be devoted each day to the general Association meetings, and the evenings to social relaxation.

12. Would it advance the value and interest of the Sections if it was understood that the Section meetings formed the leading feature of the meetings of the American Medical Association?

13. Is it wise to endeavor to have each Section choose an Executive Committee after the model suggested above, with specific instructions to look after the development of each Section by the most practicable methods?

14. Is it wise for the several Executive Committees to meet together as soon as convenient after being formed, and discuss measures by which the common interests of all the Sections shall be advanced? Would it be wise for these to form a permanent organization to secure such changes in the conduct of the affairs of the general Association as will promote their best individual and collective development?

EDITORIAL NOTES.

"TYPHOID FEVER" AT WINTERING RESORTS.—Fever is said to have declared itself at St. Augustine, and Tampa Bay, Florida, but whether it is genuine typhoid fever or a typho-malarial manifestation is not certain. There have been some hasty departures from the tourist's wintering places and a circumscribed scare has been created, affecting the good name of some of the hotels in regard to which the utmost sanitary vigilance and diligence are supposed to be exercised. No deaths have been reported to have followed these attacks of so-called typhoid fever. The late staying northerners, or the most susceptible among them, should not expect exemption from malarial or typho-malarial influences, in a country concerning which it has been satirically said that, in some districts, "building sites are sold at so much a gallon."

DEATH OF A "GLASS-EATER."—The *Medical Fortnightly*, April, refers to the fatal result of an operation on a patient at the St. Louis City Hospital, who for eight years had been a glass and nail swallower at the dime museum exhibitions of that city. On March 24, a gastrotomy was done for the relief of extreme pain and emaciation. A considerable mass, weighing over a pound, was taken from the stomach. It contained pieces of glass, shingle nails, sharp pointed tacks, and screws of various sizes; and this after an amount, not weighed, of like material had been gotten rid of by emesis. The stomach gave evidence of having been a normally developed organ before the patient entered upon the career of a "freak," and began to "eat glass" for a livelihood. He is said to have been able to follow his calling for nearly eight years, which is an exceptionally long lease of life in that hazardous business. The patient succumbed within twelve hours after the operation.

TUBERCULOUS DISEASE OF THE UVULA.—The *American Journal of the Medical Sciences* has a note on the above condition, subsequent to a "cure" of tuberculous larynx, which latter had occurred in the fourth year of a pulmonary tuberculosis. There was bilobar hypertrophy of the uvula with tubercles, at the center of each lobe. Dysphagia was extreme.

ACETANILID.—Dr. F. W. Lester, of David City, Nebraska, in *Times and Register*, calls attention to a peculiarity not formerly noted as to the above drug. He has taken it frequently as a remedy for the headache, and in ten to thirty minutes after taking it, and then going out into the open air, he observes a delightful odor not unlike that of the tuberose. Antikamnia produces the same effect, but neither antipyrin nor phenacetin has the like property. It is undoubtedly an idiosyncrasy or phenomenon having a limited range. We know of several frequent takers of the drugs acetanilid and its congener antifebrin, who have not experienced the subjective tuberose symptom.

AN M.D. SELF-QUALIFIED.—There is a sharp-witted dentist in New York City who is liable to get into legal trouble through his smartness. His name is reported as Alexander Walter, he claims to have been in dental practice twenty years, and he writes "M.D." after his name. He was arrested on four charges that he was engaged in the practice of medicine without license or diploma. In his statement he entered the plea that the letters M.D. were used to show that he was a "Mechanical Dentist," and that he had never represented himself as a doctor of medicine. His trial is still on.

LACERATION OF VAGINA DURING LABOR.—Piering has reported a case of the above named complication in a primipara, in *Centralblatt für Gynækologie*, November, 1891. The patient, aged 41, in labor at full term, had the head of child delayed at perineum on account of great rigidity of the soft parts. Instrumental delivery appeared not to be necessary, so that it was found expedient to make an incision one inch in length in the tough and inelastic perineal barrier, on right side. During the next pain a gush of blood came from the rectum. The right hand of the fœtus, and part of the forearm, came into view through the anus. The arm was replaced at once, and the child was born without additional laceration. The tissues nearest to the tear in the vagina were so badly contused that repair by first intention was out of the question. The incision in the perineum was not the seat of laceration. The uterine cervix was not torn. A thorough disinfection of the vagina was attempted, and iodoform gauze was applied in the form of a plug. On the third day the bowels were moved; no feces came out by way of the vagina. Two hyperpyrexiæ periods were all that marked the patient's convalescence. These disappeared when the torn surfaces were painted with tincture of iodine. The wound healed with a strong and firm cicatrix, which could not be discerned when examining from the rectal aspect.

THE late Ohio Legislature, with considerable merriment, rejected a bill to regulate the practice of medicine in the State, principally because it would interfere with itinerant doctors, and diminish the advertising receipts of some papers. This is a habit of protecting a class at the expense of the community, which some legislatures have. It did not adjourn however, without effecting any medical legislation. It appropriated $5,000 to test the efficacy of the Keeley cure, and made itself a sort of committee of the whole to investigate. Each member is to have the privilege of sending one patient. How many will take a personal advantage of this chance?

THE MONUMENT TO BENJAMIN RUSH.—The attention of the members of the medical profession is again called to the monument to Dr. Benjamin Rush, the great patriot physician of the Revolution, which it is proposed to erect in the city of Washington among those of the other illustrious founders of the Republic. In the person of this eminent medical man—"the greatest physician this country has ever produced," as he has been fitly styled by a very eminent physician, happily still living—*Medicine* will be worthily represented at the National Capital as a profession, which can boast of having public spirited citizens, fearless patriots, brave warriors, and wise legislators among its ranks. Benjamin Rush was, himself, all these. The members of the profession, who have not already done so, are urgently solicited to come to Detroit to attend the meeting of the American Medical Association, prepared to contribute towards the erection of this monument, or to send their subscriptions *at once* to Dewit C. Patterson, M.D., Treasurer, 919 I Street, N. W., Washington, D. C. ALBERT L. GIHON, M.D., Chairman.

GEORGE H. ROHE, M.D., Secretary.

NOTICE.—The third annual session of the Association of American Medical Colleges will convene at the Building of the Detroit College of Medicine, at 3 o'clock P.M., Wednesday, June 8, 1892. Dr. N. S. Davis, President of the Association, will read a paper upon the following named subject, to-wit: To what extent should clinical instruction be afforded the student of Medicine in regular course? Another paper will be read by Prof. V. C. Vaughan, of the University of Michigan, as follows: To what extent should laboratory instruction be afforded the student of Medicine in regular course? The discussion upon the papers will be opened by parties selected by the authors, and continued by the delegates in extenso. The indications point to a large attendance and a most interesting session, with the probability of representatives from a large majority of the colleges of the United States.

THE BACILLUS OF MEASLES.

DR. P. CANON AND DR. W. PIELICKE.

In the well-known Berliner hospital—The Moabit Barracks—of which Dr. P. Guttmann is the head, experiments have been made by Dr. P. Canon (the discoverer of the influenza bacillus) and Dr. W. Pielicke culminating in the discovery of a bacillus in the blood of measles. I herewith send a translation of their article as it will appear in the current number of the *Berliner Kleinische Wochenschrift:* .

Up to the present time but few bacteriological examinations concerning measles have been made public.

In most cases the pneumonic affected lung of measles was examined after death and various authors found cocci, arranged partly in masses, partly in chains. Thus Thaon in a pneumonic afflicted lung of measles found multitudes of diplococci and bacilli. Thus also Babes (Cornil et Babes, Les Bacteries, Paris, 1886, pages 621, 632) found in the infected lungs, lymphatic glands, nasal mucus, secretion of conjunctiva, and in the exudate of the papule, cocci, singly or in pairs forming the figure of 8, and arranged also in chains. Moreover, he examined blood obtained from the papule of measles and found, likewise, the above mentioned cocci; in one case he observed very short bacilli. In cultures he obtained streptococci which bore resemblance to the streptococcus pyogenes.

At the suggestion of Dr. P. Guttmann, the blood of fourteen patients ill with measles, was examined in colored preparations and in *all cases we found the one and same kind of bacillus.*

The cultures were prepared in the same manner as the ones used for influenza bacillus (Deutsche Medicine Wochenschrift, 1892, No. 11), and colored with a solution of eosin-methylene blue. We used mostly a solution which contained less eosin in order that a weaker supplemental color might be obtained.

Concentrated aqueous solution of methylene blue, 40.0; ¼ per cent. solution eosin (in 70 per cent. alcohol) 20.0; distilled water, 40.0. The preparations were laid in absolute alcohol from 5 to 10 minutes, then colored in the incubator at 37° C. from 6 to 20 hours; the examination was made with the aid of the movable objective of Zeiss.

The following solution proved also of benefit: Concentrated aqueous solution of methylene blue 80.0; ¼ per cent. eosin solution (in 70 per cent. alcohol), 20.0. With this solution two or three hours were sufficient to color in the incubator and all *bacilli were colored blue.* Sometimes they were colored throughout, then again the ends took on a stronger color while the middle part was paler, while at other times the outlines of the middle portions alone took the color.

The size of the bacillus varies. Often they attain the radius of a red corpuscle, others again are very small and then appear as double cocci; between these two forms there are multifarious gradations in size. Frequently, single ones are met with that are distinctly longer than broad so that one has the impression of a double bacillus or a bacillus divided in half. This form has also various sizes.

Sometimes the bacillus has an unusual size, being longer than the radius of a red corpuscle and often attaining the length of the diameter of a red corpuscle. Furthermore they do not show a like coloring throughout but have three or four spots not colored, these alternating with colored portions. In general the coloring obtained by these forms is not a strong one, the ends often showing a very weak blue. Finally, they are frequently easily bent, and appear only in cultures which were taken toward the end of the fever (on the sixth day).

We hold that the *bacillus found by us in the living blood of the fourteen cases of measles are alike, and we see in them the exciting cause of the disease.*

These bacilli are found in the blood of measles in various quantities. We found on several occasions in two or three preparations taken from the blood but few bacilli, while at other times the very first field was crowded.

There were plenty single ones, and in most of the cases (12) masses of from 8 to 20 single ones could be traced.

The position of the bacilli to one another was not characteristic; though they showed an inclination to arrange themselves parallel to one another, still others lay close behind each other forming obtuse angles.

As regards the time; the bacilli were found during the whole course of the measles, in one case three days after the fever had disappeared. In later cases at the period of the crisis, they were present in particularly large quantities. While at the time of the disappearance of fever the most were then discovered.

Aside from these fourteen cases we examined the blood of seven children who were just convalescing from the measles, and where the exanthema were beginning to pale. In these seven cases the examination resulted negatively. We also examined the blood of a child dead from measles, ten hours after. This death was directly due to measles (without any complication of lung); we could not determine any bacilli with certainty, nor was the child's blood examined while yet alive.

Several cultures were colored according to Gram—the bacilli remained uncolored and appeared just as pale as the red blood corpuscles.

The bacilli as found in the blood were also seen in the *excretions and secretions of the nose and conjunctiva.* In all cases we attempted to make the culture by taking the blood from a punctured finger and inoculating glycerine agar, blood-serum, or milk (we used mother's milk). We did not succeed in our efforts to breed the bacilli of the blood in these soils. Later on we applied ourselves chiefly with bouillon, inoculating from one to three drops of blood; generally from six to ten bouillon-glasses were used.

In three cases bacilli were found in the blood-impregnated bouillon whose form agreed with the bacilli found in the blood cultures and from which no further cultures could be made in glycerine-agar, blood serum or bouillon. At first the bouillon remained clear; below a sediment was found which was partly due to the inoculated blood; then after several days there was noticed a faint cloudiness and small flakes formed, which, by agitating the glass, rose to the top. In these bouillon cultures were also found bacilli in various forms, at times symmetrically colored resembling, sometimes, diplöcocci, and at other times double-bacilli. Some single ones were found, which in length surpassed those which we had seen in the blood cultures; most of them were easy to recognize as they were made up of several frames which lay behind each other, at times they changed in position from each other and formed obtuse angles. The bacilli in these bouillon cultures did not color themselves according to Gram and äppeared to have a slight movement of their own.

In one of the three cases mentioned (there were four), in all the bouillon-glasses which were inoculated with the blood these bacilli were found in large quantities; inoculations in glycerine-agar and blood-serum, done at the same time, remained sterile. The blood inoculations in these cases were done near the end of the fever process, at the beginning of the crisis; in the blood cultures prepared at the same time the bacilli were also found in large quantities. Moreover, it was discovered that three days after the fever process had ended, *the bacilli still existed in the blood.*

A few days prior we obtained blood from the same children; this was placed in sterile tubes which, after two days in the incubator, were made into cultures with bouillon, and also with agar. In one of the bouillon glasses we found bacilli, while the agar remained sterile. Here also attempts at further culture proved futile. Following this method, Bruschettini cultivated the influenza bacillus out of the living blood (*Riforma Medica*, n. 23, Gennaio, 1892). Often, in the course of our examination, we utilized this method, but aside from this one case, without result.

In the other two cases where the bacilli from the living blood could be cultivated in bouillon, the inoculation was performed during the fever process, and in only one or two glasses could bacilli be found; all the other glasses remained sterile.

On the other hand, in two other cases where the blood was inoculated during the fever process, no bacilli were found in the bouillon glasses.

The same negative result ensued in a number of blood inoculations which were taken one or two days after the fever process had ceased. In one cultivation at any rate, taken from a blood-inoculated bouillon-glass, after the same had been sufficiently shaken, and by the aid of a movable objective, we found, after diligent search, from two to five bacilli; though it is questionable to conclude from this that there is an increase of bacilli in the bouillon culture.

In one case, ten hours after a death due directly to measles, plentiful inoculations were made in different cultures, as also in bouillon. All remained sterile.

Finally, the experiment was tried to cultivate the bacilli in blood-serum glycerine-agar, after the method of Wertheim, who advised the same in gonococci cultures (*Deutsch. Medic. Wochenschr.*, 1891, No. 50). These attempts, up to the present, proved futile. In this case the blood-serum was obtained from a person who was said to have had severe measles seven years prior. It might have been more advisable to use as a breeding soil the blood of a person who never had measles, and therefore who has had no certain immunity from the disease.

These bacilli found by us in measles, *discriminate themselves substantially from those microörganisms which have ever been described up to this time.* It is possible that the one case of Babes of the bacillus seen in the blood, "*bacilles très courts*," of which he furnished no description, may be identical with our bacillus, but as he only found cocci (microbes ronds), he does not mention in how many cases—that lay singly, mostly also in pairs, and often formed chains—therefore no further consideration need be taken of this discovery, on which he himself appears to lay no stress.

Translated by Dr. Jacob Rosenthal.

Berlin, April 16, 1892.

MISCELLANY.

The Illinois Army and Navy Medical Association.—*Annual meeting* will be held at Vandalia, May 19–20, 1892.

Officers—President, John H. Rauch, Chicago; First Vice-President, Henry W. Kendall, Quincy; Second Vice-President, Robert Roskoten, Peoria; Third Vice-President, Archibald Agnew, Samoth; Fourth Vice-President, Edmund Andrews, Chicago; Fifth Vice-President, A. C. Pickett, Mattoon; Secretary, Edward P. Bartlett, Springfield; Treasurer, W. J. Chenowith, Decatur.

Historical Committee—John H. Hollister, Chicago; John D. Skeer, Chicago; Z. P. Hanson, Chicago; R. M. Lackey, Oak Park; J. W. Green, Marengo; H. T. Godfrey, Galena; Edward Gaylord, Magnolia; J. C. Corbus, Mendota; H. A. Kelso, Paxton; E. L. Phillips, Galesburg; S. C. Plummer, Rock Island; W. C. Day, Winchester; P. L. Dieffenbacher, Havana; I. N. Barnes, Decatur; Lyman Hall, Champaign; Z. D. French, Sumner; J. P. Matthews, Carlinville; E. Gulich, Alton; H. C. Plummer, Mt. Vernon; Ford S. Dodds, Anna.

Committee on By-Laws—W. O. Ensign, Rutland; D. H. Law, Dixon; P. L. Dieffenbacher, Havana.

The Illinois State Medical Society will meet at Vandalia, May 17–18–19, 1892, and the usual reduction in railroad fare is promised, on the certificate plan. The certificate should be secured when the ticket is bought at the local railroad office.

The Association will be called to order on Thursday forenoon, and remain in session during Friday, May 20, thus enabling members to reach their homes before the Sabbath.

Edward P. Bartlett, Secretary.

Association of American Physicians.—The following is the programme of the Seventh Annual Meeting of the Association of American Physicians, to be held in the Army Medical Museum and Library Building, corner Seventh and B streets, Washington, D. C., May 24, 25 and 26, 1892:

Tuesday, May 24. Morning session, 10 a.m.—1. President's Address, by Henry M. Lyman, Chicago, Ill.; 2. General Business; 3. The Cold Water Treatment of Typhoid Fever, by G. Wilkins, Montreal; 4. The Treatment of Follicular Tonsillitis, by G. M. Garland, Boston; 5. A Collective Investigation in Regard to the Value of Quinine in Malarial Hæmaturia or Malarial Hæmoglobinuria, by H. A. Hare, Philadelphia; 6. Alcoholism, by T. S. Latimer, Baltimore.

Afternoon session, 2.30 p.m.—7. Practical Results of Bacteriological Researches, by G. M. Sternberg, U. S. N.; 8. The Treatment of Experimental Tuberculosis by Koch's Tuberculin, Hunter's Modifications, and other products of the Tubercle Bacilli, by E. L. Trudeau, Saranac Lake; 9. Report of a Case of Glanders, with Results of Bacteriological Study, by William Pepper, Philadelphia; 10. The Bacteriological Study of Drinking Water, by V. C. Vaughan, Ann Arbor; 11. The Morbid Anatomy of Leprosy, by Heneage Gibbes, Ann Arbor, Mich.

Wednesday, May 25. Morning session, 10 a.m.—12. Discussion on Dysentery—Etiology and Pathology; Referee, W. T. Councilman, Baltimore; Symptomatology, Complications and Treatment; Co-Referee, A. B. Ball, New York; 13. Treatment of Acute Dysentery by Antiseptic Colon and Rectal Irrigation, by W. W. Johnston, Washington; 14. A Contribution to the Study of Hepatic Abscess, by W. C. Dabney, Virginia; 15. Pulsating Pleural Effusions, by James C. Wilson, Philadelphia.

Afternoon session, 2.30 p.m.—16. A Case Presenting the Symptoms of Landry's Paralysis, with Recovery, by F. T. Miles, Baltimore; 17. A Case Showing Symptoms of Landry's Paralysis—Recovery, by A. McPhedran, Toronto, Canada; 18. The Areas of Anæsthesia in Spinal Cord Lesions as a Guide to Localization, by M. A. Starr, New York; 19. A Study of the Seasonal Relations of Chorea and Rheumatism for a Period of Fifteen Years, by Morris J. Lewis, Philadelphia; 20. The Significance of Intermission in Functional Nervous Diseases, by W. H. Thomson, New York.

Thursday, May 26. Morning session, 10 a.m.—21. Misconceptions and Misnomers Revealed by Modern Gastric Research, by Charles G. Stockton, Buffalo; 22. The Production of Tubular Breathing in Consolidation and other Conditions of the Lungs, by Charles Cary, Buffalo; 23. The Different Forms of Cardiac Pain, by Samuel G. Chew, Baltimore; 24. The Late Systolic Murmur, by J. P. Crozer Griffith, Philadelphia; 25. Tube Casts and Their Diagnostic Value, by I. N. Danforth, Chicago; 26. Studies in Hypnotism, by B. F. Westbrook, Brooklyn; 27. Influenza, and Some of its Present Aspects, by Morris Longstreth, Philadelphia; 28. Concluding Business.

The annual dinner of the Association will be held on the evening of Wednesday, May 25, at 8 o'clock, in the Arlington Hotel.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from April 23, 1892, to April 29, 1892.

Capt. John L. Phillips, Asst. Surgeon U. S. A., is granted leave of absence for one month, to take effect on the final adjournment of the board of officers convened by Par. 1, S. O. 32, c. s., Hdqrs. Dept. of Missouri.

Capt. Benjamin Munday, Asst. Surgeon U. S. A., is granted an extension of one month to leave of absence granted in S. O. 40, Dept. Dak., March 19, 1892. S. O. 98, A. G. O., April 26, 1892.

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ORIGINAL ARTICLES.

ON PREVALENT THERAPEUTIC INCONSISTENCIES IN MEDICAL PRACTICE, ILLUSTRATED IN CURRENT MEDICAL LITERATURE AND IN CLINICAL OBSERVATIONS.

Read in the Medical Section of the Michigan State Medical Society, May 5, 1892.

BY N. S. DAVIS, M.D., LL.D.,
OF CHICAGO, ILL.

To gain a correct knowledge of the morbid processes capable of taking place in the human body and the laws by which they are governed, on the one hand, and an equally correct knowledge of the action of remedial agents, on the other, are the two great leading objects of every thoughtful and conscientious physician. Without the first, he is incapable of seeing clearly what he needs to accomplish in the treatment of any given morbid condition or disease; and without the second, he is equally in doubt as to the particular remedy best adapted to the accomplishment of the changes desired; and in consequence he is obliged to prescribe empyrically such remedies as are recommended by his teachers or authors.

For instance, if he regards any given case of fever as simply increase of heat or pyrexia as its chief pathological element, without any definite knowledge as to whether such pyrexia has resulted from increased activity in the processes of heat production or a diminution of those of heat dissipation, he will have no guide as to which of the antipyretic remedies is best adapted to the case before him.

Or, if he has learned to discriminate correctly the special morbid processes by which the pyrexia is sustained but has neglected to study the modus operandi, or mode of action of such remedial agents as are known to reduce animal temperature he is equally in doubt and as liable to choose the wrong therapeutic agent as the right one.

The inadequacy of time hitherto devoted to study in the two directions just named, and the consequent incompleteness of knowledge concerning both morbid processes and the action of remedies, has caused our medical literature to be filled with the most confused and even contradictory statements concerning the application of remedies in the treatment of disease; and sometimes even attributing to the same remedy qualities so diverse as to be incapable of rational explanation.

Opium and alcohol furnish striking examples of the latter. Thus, in that well known standard work, the National Dispensatory, we are informed that, "alcohol applied to the roots or stems of plants destroys their life. It is poisonous to every animal, producing local or general anæsthesia, according to the mode of the employment. Applied to the trunk of a nerve it paralyzes all its branches, and to the brain it impairs sensation and voluntary motion. * * * Taken internally, in small quantities appropriately diluted, it excites a sense of warmth in the stomach, and, if the person is very susceptible, an almost instantaneous glow throughout the body, etc. * * * In larger and intoxicating doses, alcohol occasions such symptoms for a shorter time, but speedily induces a state of impaired perception and motor power, which is followed by one of total insensibility and unconsciousness, in which the phenomena are those of congestion of the brain, and usually of the whole capillary vascular system, although the latter sometimes gives way to coldness and pallor." Yet, on the next page of the same work, the same substance is represented as "stimulating the exhausted nervous system and thereby exciting the distended capillary blood vessels to contract," and as under certain circumstances acting as food. And again that "in the form of distilled spirits, alcohol is the universal and familiar remedy for *debility of every kind*, whether it be due to exhaustion produced by shock or fatigue, or shown by syncope arising from a nervously feeble or an exhausted heart, to wasting chronic disease, or to the tissue destruction of acute febrile affections."

How any material substance can possess such properties as to be capable of diminishing the sensibility of the whole nervous system, of impairing the oxidizing power of the blood-corpuscles, of lessening metabolic changes in all the living structures, and by contact absolutely poisonous or destructive to both vegetable and animal life; and yet be capable of "stimulating the exhausted nervous system," of becoming real food, and of exhibiting such ubiquitous tonic powers as to constitute a universal "remedy for debility of every kind," is certainly beyond the comprehension of an ordinary mind.

One of the most influential causes of confusion and failure in the application of remedies in the treatment of disease, is the long continued custom of classifying or rather grouping of remedies in reference to their influence over some one prominent symptom of disease, instead of on their real mode of action in the system. For instance we group together all remedies capable of efficiently reducing animal heat and call them antipyretics. Hence, we find under that name sponging, packing, and bathing with water, the exhibition of quinine, salicine, antipyrin, acetanilide, phenacetin, digitalis, *etc.*; and not unfrequently we see nearly all of them given in turn to the same patient during a single run of continued fever. Yet there is no fact within the domain of therapeutics better established than that antipyrin, phenacetin, and all the recently constructed coal-tar series of antipyretics, so modify the hemoglobin of the blood as to lessen its conversion into oxyhemoglobin, and therefore lessen the conveyance of the oxygen from the pulmonary to the systemic capillaries, and thereby diminish temperature by diminishing tissue metabolism and the sensibility of the cardiac, vaso-motor, and respiratory nerve centers.

In other words, they diminish the internal respiration by which oxygen is carried from the pulmonary to the systemic capillaries and carbon dioxide returned, and in the same proportion they diminish nerve sensibility and natural molecular and secretory action. Therefore, they reduce temperature principally by depressing all the processes by which heat is naturally evolved. On the other hand, the use of water by sponging, packing, or full baths, increases the activity of the nervous centers and of the natural secreting structures and actively reduces the temperature by increasing the processes of heat dissipation. Thus, while both series of remedies are called antipyretic, they produce their antipyretic effects by influencing the cardiac, vaso-motor, and respiratory functions in nearly opposite directions. And yet we have often found the practitioner daily administering both kinds to the same fever patient for one or two weeks in succession.

Another cause of much inconsistent and even contradictory use of remedies in the treatment of diseases, is the failure to maintain a clear line of distinction between tonics, stimulants and anæsthetics. Correctly speaking, a *tonic* is an agent that is capable of increasing the tonicity, strength, and natural efficiency of some one or all of the structures of the body. A *stimulant* is one that simply increases the excitability and rapidity of action. An *anæsthetic* is one that directly diminishes both sensibility and action, either local or general, according to the method of its use. Within certain limits, it is evident that tonics and stimulants may coöperate in their action on the structures and functions of the living body at the same time; while the action of an anæsthetic is directly antagonistic to both. And still, some of the most familiar and extensively used anæsthetics are spoken of and used as stimulants and tonics both in and out of the profession, and often given alternately with the latter, to the same patient from day to day. Both in standard works on practical medicine and in the periodical medical literature we find iron, quinine, mineral acids, cod-liver oil, wines, distilled spirits, ammonia, camphor, etc., enumerated as general tonics and stimulants, adapted for the promotion of strength and nutrition. And in referring to special cardiac tonics and stimulants, strychnine and alcohol almost always head the list, followed by digitalis, strophanthus, convollaria, cactus, musk, oxygen, etc. One eminent teacher and writer on practice of medicine says in regard to lobar pneumonia, the two chief sources of danger are "*heart-insufficiency and high temperature*," and he adds that "alcohol, judiciously used, is the most efficient means for overcoming" the first, and the sulphate of quinine in moderately antipyretic doses, the second. Another writer in the January number of *International Clinics*, 1892, formulates the treatment of catarrhal pneumonia in children under the following heads: 1. Fresh air. 2. Relief of pain. 3. Stimulation. 4. Treatment of complications. Under the first head he very properly insists on the most free and efficient ventilation of the sick room, that the patient may have constant access to *fresh* air. For relieving pain he condemns the use of opiates as dangerous in such cases and relies on simple emollient poultices to the chest. For *stimulation*, he says: "We stimulate by the constant administration of alcohol; fifteen, twenty, twenty-five drops, or a teaspoonful of whisky, according to age, every two hours." In several very recent numbers of the *British Medical Journal*, correspondents have detailed a number of cases of extreme depression and cyanosis in pneumonia treated with strychnine and oxygen inhalation, and at the same time giving brandy or whisky between the inhalations. Each inhalation revived and improved the aspect of the patient, only to be quickly replaced by the cyanosis and finally the death of the patient. One case came under my own observation, in the treatment of which the attending physician was diligently administering oxygen by inhalation and brandy, both by the mouth and rectum. And very many times during the last ten or fifteen years I have seen patients in the second, third, and even the fourth week of typhoid fever, who were diligently taking day after day, antipyrin, acetanilide or phenacetin to reduce the temperature; strychnine and mineral acids to increase innervation or nerve sensibility; and wine, whisky or brandy as supposed cardiac tonics. If we examine the results of the most reliable investigations concerning the action of the remedies mentioned as used in the cases to which I have just alluded, we quickly learn that the patients were actually using, coincidently, remedies of decided antagonistic influence on the structures and functions of the human body. For instance, both carefully executed experiments on animals, and abundant clinical observation have shown that antipyrin and the group of antipyretics to which it belongs directly diminish the formation of oxyhemoglobin in the pulmonary capillaries and the conveyance of oxygen to the systemic capillaries, and thereby diminish metabolism, heat production and nerve force. Hence, there are many cases on record, in which their administration was followed by cyanosis and a dangerous degree of depression of the cardiac, vaso-motor and respiratory nerve functions. Still more numerous experiments on animals and almost unlimited clinical observation has shown that alcohol produces a similar effect on the hemoglobin and albuminous constituents of the blood, thereby lessening the tissue metabolism, but more directly diminishing at the same time the sensibility of the whole nervous system in a manner closely analagous to that of chloroform and ether. Therefore, instead of acting as either a stimulant or tonic, it constitutes a true anæsthetic, and has been often used as such, mixed with chloroform and ether. When introduced into the system in any manner, it not only diminishes the sensibility of the cerebral hemispheres and thereby suspends consciousness, but it also lessens the sensibility of the vaso-motor, respiratory and cardiac nerve ganglia, and in direct proportion to the amount used.

On the other hand, strychnine is conceded by all, to be capable of directly increasing the sensibility and action of the cardiac, vaso-motor, respiratory and cerebro-spinal nerve structures; and therefore, is in direct physiological and therapeutic antagonism with the antipyrin, alcohol and other anæsthetics. Consequently when a patient with typhoid fever is given from day to day antipyrin or phenacetin to control temperature, milk and eggs liberally mixed with alcohol for nourishment; and strychnine, mineral acids, and fresh air for tonics; the antipyrin and alcohol directly antagonize the influence of the strychnine and fresh air, both on the nervous centres and on the blood and tissue changes. If in such cases, the antipyrin and alcohol, and all other agents of similar action, were entirely omitted, and judicious applications of water to the surface substituted, the treatment would be harmonious and far more beneficial in its results, as I have seen demonstrated many times during the last half century.

In the cases of pneumonia to which I have alluded, the inconsistency of giving whisky or brandy or any other alcoholic freely, alternately with digitalis, strychnia, fresh air or oxygen, is still more apparent. The pneumonic engorgement of the lung has already much diminished the amount of oxyhemoglobin in the blood and thereby checked both tissue metabolism and renal secretion, as well as dulled the nervous sensibilities, voluntary and involuntary. In such a condition, to set the doors and windows open for fresh air, or to give the patient oxygen inhalations, and at the same time liberally of alcoholics, perhaps twice in the twenty-four hours an antipyretic dose of antipyrin or phenacetin, or a hypodermic dose of morphine, would be much like plugging the larynx of a dog, and then trying to keep him alive by practicing artificial respiration without removing the plug.

I am well aware that those who give alcohol in pneumonia, do it in obedience to the teaching that the chief danger in the disease is cardiac weakness and that alcohol is an efficient cardiac tonic. But why does the heart become weak or inefficient in pneumonia? Certainly not from fatty degeneration or any other structural change in the cardiac muscle; but its weakness is either from the diminished oxygenation and decarbonization of the blood through the obstructed parenchyma of the lung, or from the toxic effect of ptomaines or leucomaines, bacteriological or renal, or from all these combined. If it were possible, with the patient in such condition, to simply increase the action of the heart, it would only pump more blood into the already obstructed pulmonary capillaries and still further diminish the natural entrance of oxygen through the air cells of the lungs, and thereby increase the danger of inducing both respiratory and cardiac paralysis. The rational indications for treatment, then, are, to lessen the pressure of blood and inflammatory products upon the pulmonary alveoli, and thereby allow the entrance of more oxygen and the exit of more carbon dioxide, and as far as possible to neutralize or eliminate the toxic ptomaines whether derived from the pneumococcus or from retained elements of urine or bile. Just in proportion as we accomplish these, we restore the natural sensibility and action of the nervous structures, increase the renal and hepatic secretions, and promote natural metabolism throughout the system.

But do not both common observation, whether at the bed-side or in the social circle, and the most accurate experimental work show, that alcohol is a true anæsthetic, diminishing nerve sensibility, muscular force, and the efficiency of the blood in carrying oxygen from the pulmonary to the systemic capillaries in direct proportion to the quantity introduced into the system? If any one has doubts concerning the affirmation of this question, let him read carefully the experiments of Sidney Ringer and Prof. Martin on the action of alcohol on the isolated heart, and those of H. C. Wood, as given in his address on Anæsthesia before the International Medical Congress in Berlin. If we add to the results obtained by these three, those obtained by R. Dubois in 1883, we have the most complete demonstration, not only that ether, chloroform and alcohol are true anæsthetics, each mutually intensifying the action of the others, but that each directly diminishes the sensibility and action of the vaso-motor, respiratory and cardiac nerve ganglia or centers, in direct proportion to the amount introduced into the blood, until either respiratory or cardiac paralysis ensues. And also that there is no stage in their action when the efficiency of the heart is increased. Then why longer be so inconsistent in the use of language as to call either of them a stimulant or tonic? And why continue to give one of them liberally with one hand, while with the other you give to the same patient its most direct physiological antagonists, digitalis, strychnine, or oxygen? Or why cap the climax of inconsistency by giving a patient already dangerously depressed from anæsthetics, hypodermic injections of ether or alcohol as supposed restoratives, as has been done many times both in this country and in Europe? Indeed it is only a few weeks since that a case was reported in the *British Medical Journal*, of a patient whose respiration and circulation had been suddenly suspended during the inhalation of the anæsthetic composed of ether, chloroform, and alcohol combined, and aside from the practice of artificial respiration the most prominent remedy mentioned was hypodermic injections of ether. Of course the patient did not recover. Many years since a man was brought into the hospital partially intoxicated by alcoholic drinks with a dislocation of the head of the humerus. As he was somewhat boisterous the the surgeon thought to quiet him and facilitate the reduction of the displaced bone by a cautious inhalation of chloroform. But he had inhaled only a very small quantity before both respiratory and cardiac action suddenly ceased and all efforts to restore them failed. The amount of alcohol already in his blood and nerve tissues rendered the addition of only a very small quantity of chloroform acting in the same direction, sufficient to overwhelm their functions. Another case came under my observation illustrating the danger of giving in quick succession different remedies capable of modifying the functions of the nervous centres in the same direction. The patient was wild and restless from delirium tremens. To quiet the delirium and induce sleep, the attending physician gave him chloral hydrate and potassium bromide every hour until three doses had been taken, forced a moderate amount of inhalation of chloroform, and finally gave half a grain of morphine, which was soon followed by sleep from which he never awoke. The amount given of any one of the four remedies used was not sufficient to endanger the life of the patient, but the coöperation of all certainly and speedily proved fatal.

Such cases show that it is quite as necessary that the physician should know accurately what remedies coincide and mutually intensify their action, as it is those that directly antagonize each other. And this suggests another item of extreme practical importance. It is to avoid giving a remedy to relieve some troublesome symptom without just apprec ation of its liability to increase some of the most important pathological conditions involved in the case.

For instance, in many cases of capillary bronchitis and of acute pneumonia, the patient becomes very restless from the oppressed breathing and harassing cough, and at the same time his urine is scanty and his blood surcharged with renal and bacteriological toxic elements with excess of carbon dioxide and deficiency of oxygen. But his physician overlooking these, thinks it necessary to give his patient rest, and for that purpose gives him a fair hypodermic dose of morphine and perhaps an antipyretic dose of phenacetin to control the temperature. In a short time the patient becomes quiet, sleeps some and expresses himself as much better, but is still drowsy, with a soft frequent pulse, frequent and shallow respiration, and moist râles over nearly the whole chest. In from twelve to twenty-four hours, the somnolence instead of disappearing is increasing, the pulse is weaker, the respirations more frequent and less deep, the cutaneous surface is moist and dingy or of a leaden hue, and the physical signs of pulmonary œdema are hourly increasing. Now, if not before, the alcohol in the form of whisky or brandy, is given freely for the alleged purpose of sustaining the failing heart. But, nevertheless, in another twenty-four or thirty-six hours the patient is dead. While the morphine quieted the cough and restlessness, giving the patient an appearance of relief, in the same ratio it diminished the efforts to keep the bronchioles and alveoli free, consequently less oxygen reached the hemoglobin of the blood and carbon-dioxide accumulated still more rapidly, until vaso-motor paralysis and pulmonary œdema completed the fatal process. During the unusual prevalence of pneumonia and other acute pulmonary affections, that have accompanied the influenza epidemics of the last three years, many cases have occurred to which the foregoing description would apply with almost literal accuracy.

Another of the most common therapeutic inconsistencies that mars the pages of our medical literature and leads to most important errors in practice, is the claim that the same medicine or therapeutic agent, may produce directly opposite effects on the living body by simply varying the dose. Examination will show that this claim is limited chiefly to the two important groups of medicinal agents properly called narcotics and anæsthetics. These are universally recognised as exerting their principal influence on the functions of some part or all of the nerve structures of the body, while some of them exert an equally direct influence on the constituents of the blood and through it upon the metabolism of the tissues generally. Concerning nearly all of the members of these two classes, and especially regarding the two representative articles, opium and alcohol, we are constantly assured that in small doses they are stimulating or tonic; in larger doses, anodyne or inebriating; in still larger doses, narcotizing or anæsthetic; and in still larger doses paralyzing or destructive to life. Consequently the very general popular belief, and equally popular practice, is, that their use in small doses is cordial, restorative or tonic and therefore beneficial, and injurious only when taken in larger doses. Unfortunately, however, no one has yet been able to define the limit or dividing line where the small or tonic dose ends and the larger or depressing dose begins. All admit that even in small doses, these remedies diminish the amount of oxygen conveyed from the pulmonary to the systemic capillaries, and thereby diminish the molecular or metabolic tissue changes and the excretion of th products of natural tissue metamorphosis. Indee it is on this power to diminish the internal distribtion of oxygen and its action on the tissues that on of their chief and most important uses is made to dpend, both in health and disease. But while lookin in this direction and perhaps admiring the workin of this fancifully so-called "savings bank for the tissues," it seems to be forgotten that all nerve sensibility and force depends upon the presence of blood containing the natural amount of oxygen; and that jus in proportion as we diminish the proportion o oxygen in the blood distributed to the nerve structur we diminish both nerve sensibility and muscular action. So true is this, that the simple exclusion o oxygen produces a more speedy suspension of all sensibility or profound anæsthesia, than can be produced by the most active anæsthetics known.

Is it not then physiologically impossible that any agent should so far diminish the distribution of oxygen in the arterial blood as to diminish general tissue metabolism and not at the same time diminish the sensibility and action of the nerve structures bot voluntary and involuntary? And if so, how can i be at the same time a cardiac tonic and general restorative?

A careful and thorough review of all the facts, social, clinical and experimental, bearing on this subject, will show that the very general belief in the stimulating or tonic properties of small and repeated doses of alcohol and opium is erroneous, being founded on a wrong interpretation of the primary symptoms produced.

Of course no such review of the facts can be given within the proper limits of this paper, but I may trespass upon your patience long enough to suggest the more important conclusions to which it would lead. For instance, the temporary quickening of the pulse or heart beat, the sense of warmth and lightness or exhilaration, that pervades the system, and the greater volubility of speech and less restraint in action, which constitute the only foundation for the popular idea of stimulation, on closer physiological analysis will be found to be evidences of coincident diminution of nerve sensibility (anæsthesia), and retarded tissue metabolism. The nervous apparatus controlling the circulation of the blood embraces both cardiac accelerators and inhibitors, and every well-informed psychologist knows that the mental part of the brain furnishes both accelerators and inhibitors of mental action. Indeed, it is the possession of the latter that gives to the human species one of its most distinctive characteristics, namely: the power of self-control and the sense of propriety. Every true narcotic and anæsthetic makes its first recognizable impression simultaneously on the cerebral hemispheres and the vaso-motor and cardiac nerve structures, lessening their sensibility, partly by direct contact with the nerve cells, and partly from interference with the internal respiration. Such lessened sensibility in the cerebral convolutions, when slight, simply diminishes the mental consciousness of outward impressions, and lessens the balance between mental acceleration and inhibition. Hence they exhibit less consciousness of cold, or heat, or pain, and more mental exhilaration, with less reserve or self-restraint.

Precisely the same kind of influence is exerted on the nerves regulating the circulation, causing a very transient semblance of increased activity, but which is really lessened efficiency of circulation and molecular change. Now if you duplicate the dose of the same agent, the patient's consciousness of impressions is still less, and while he is under the same impression that he could do a great deal, his mental exhilaration and lack of self-restraint has given place to mental incoherence and incoördination of muscular action. Again duplicate the dose, and your patient soon lies profoundly unconscious, with every voluntary muscle paralyzed, with the cardiac and respiratory functions on the verge of final suspension.

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This is fully corroborated not only by the experiments of Dubois, Sidney Ringer, Martin and Wood, to which I have before referred, and many others, but also by a great variety of facts to be gathered from the mortuary, vital and social statistics of every civilized people. Did time permit, I might point out many more important therapeutic inconsistencies, that are to be found in the daily routine of medical practice, but those to which I have referred are sufficient for my present purpose. For the leading object I had in view in presenting this paper, was to urge upon your attention the importance of a more thorough study of the nature and true physiological action of the articles of our superabundant materia medica, in connection with an equally thorough study of the actual pathological processes that constitute disease.

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And for gaining more exact knowledge of such relations, I would have every medical college laboratory, public hospital and dispensary, furnished with the necessary apparatus and means for such investigations, and with skilled workmen to use them.

A PLEA FOR THE MEDICAL EXPERT.

L. HARRISON METTLER, A.M., M.D.,
OF CHICAGO.

Ever since Bacon and Descartes overthrew the deductive method of scientific investigation founded by Aristotle and practiced by the mediæval schoolmen, a more rigid exactness has been demanded by mankind in the statement of scientific facts. "Give us facts and away with theories" is the modern battle-cry of practical science. A mathematical precision only is worthy of its dignity. Mathematics itself and chemistry and astronomy are upheld as the models, and all knowledge that falls short of their exactness is looked upon with a gentle suspicion, and perhaps a sympathetic pity. Civil and mechanical engineering, architecture, steam manufacturing, and all the other arts and sciences based upon geometrical principles have taught us to be so rigid in our demands that we have very little patience left for what cannot be demonstrated by the rule of three or solved by the theorems of Euclid. We want so much to know the precise height and depth of everything, that we are prone to quarrel with mere opinions and to laugh to scorn imaginary theories. Columbus' visions of a western passage and Roger Bacon's dreams of the transmutation of metals would be deemed more than chimerical to-day if their whys and wherefores could not all be first figured upon the written scroll. It is fortunate, perhaps, for the race that science is made to toe the line in this unflinching manner. The darkness of the Middle Ages would long ago have been dispelled had the schoolmen watched, like Newton, an apple fall, instead of arguing how many angels could dance upon the point of a needle; and mankind would ere this have enjoyed the comforts and luxuries of modern civilization had the astrologers employed their vigils studying the measurements of time and space instead of concocting absurd horoscopes for the amusement of superstitious emperors. But at the same time there is a risk in being too exact, or rather in being satisfied with nothing but what is mathematically demonstrable. If we allow such a tendency to overrule us, all art will vanish like the morning mist, and science will go limping like a lame creature on a single crutch. We want precision, as much as we can get of it, but precision cannot always be obtained at once. Nay, more, in some departments of human knowledge it looks as though it were entirely unattainable. Who can round the circle or square the angles of such sciences for instance as sociology, physiology, morphology? Trousseau used to ridicule psychology, which he was wont to call a pseudoscience. When we survey the broad field of science in general, how meagre and stunted the harvest seems to be! Excepting the truths of mathematics we cannot say positively that we know anything. Even the knowledge that we do possess of the exact sciences is only relatively exact. It is so easy to ask questions which it is impossible to answer, and science may be criticised by the smallest child despite its presentation by the most learned savant. It is just here that the unseemly wrangles occur in our courts between the legal and medical talent. I am not referring now to those dishonest methods too often adopted by both the counsel and the medical expert for the purpose of warping known facts to gain an end. I speak of those instances that do occur, though less frequently, in which there is an honest but unsuccessful effort to learn some positive medical facts for the guidance of the court and jury. In such cases it almost always happens that the medical expert is chagrined at his own inability to supply the needed information, and the lawyer turns away with a very natural, but unwarrantable disgust for the boasted truths of medical science. The former is inclined to assume too much, the latter to demand too much. The fault is thus somewhat on both sides, more often on the side of the legal fraternity.

When one of the judges of the supreme court of Maine asserts that if there be any kind of testimony that is not only of no value, but even worse than that it is in his judgment that of medical experts, it is evident something must be radically wrong with the

For instance, in many cases of capillary bronchitis and of acute pneumonia, the patient becomes very restless from the oppressed breathing and harassing cough, and at the same time his urine is scanty and his blood surcharged with renal and bacteriological toxic elements with excess of carbon dioxide and deficiency of oxygen. But his physician overlooking these, thinks it necessary to give his patient rest, and for that purpose gives him a fair hypodermic dose of morphine and perhaps an antipyretic dose of phenacetin to control the temperature. In a short time the patient becomes quiet, sleeps some and expresses himself as much better, but is still drowsy, with a soft frequent pulse, frequent and shallow respiration, and moist râles over nearly the whole chest. In from twelve to twenty-four hours, the somnolence instead of disappearing is increasing, the pulse is weaker, the respirations more frequent and less deep, the cutaneous surface is moist and dingy or of a leaden hue, and the physical signs of pulmonary œdema are hourly increasing. Now, if not before, the alcohol in the form of whisky or brandy, is given freely for the alleged purpose of sustaining the failing heart. But, nevertheless, in another twenty-four or thirty-six hours the patient is dead. While the morphine quieted the cough and restlessness, giving the patient an appearance of relief, in the same ratio it diminished the efforts to keep the bronchioles and alveoli free, consequently less oxygen reached the hemoglobin of the blood and carbon-dioxide accumulated still more rapidly, until vaso-motor paralysis and pulmonary œdema completed the fatal process. During the unusual prevalence of pneumonia and other acute pulmonary affections, that have accompanied the influenza epidemics of the last three years, many cases have occurred to which the foregoing description would apply with almost literal accuracy.

Another of the most common therapeutic inconsistencies that mars the pages of our medical literature and leads to most important errors in practice, is the claim that the same medicine or therapeutic agent, may produce directly opposite effects on the living body by simply varying the dose. Examination will show that this claim is limited chiefly to the two important groups of medicinal agents properly called narcotics and anæsthetics. These are universally recognised as exerting their principal influence on the functions of some part or all of the nerve structures of the body, while some of them exert an equally direct influence on the constituents of the blood and through it upon the metabolism of the tissues generally. Concerning nearly all of the members of these two classes, and especially regarding the two representative articles, opium and alcohol, we are constantly assured that in small doses they are stimulating or tonic; in larger doses, anodyne or inebriating; in still larger doses, narcotizing or anæsthetic; and in still larger doses paralyzing or destructive to life. Consequently the very general popular belief, and equally popular practice, is, that their use in small doses is cordial, restorative or tonic and therefore beneficial, and injurious only when taken in larger doses. Unfortunately, however, no one has yet been able to define the limit or dividing line where the small or tonic dose ends and the larger or depressing dose begins. All admit that even in small doses, these remedies *diminish the amount* of oxygen conveyed from the pulmonary to the systemic capillaries, and thereby diminish the molecular or metabolic tissue changes and the excretion of the products of natural tissue metamorphosis. Indeed, it is on this power to diminish the internal distribution of oxygen and its action on the tissues that one of their chief and most important uses is made to depend, both in health and disease. But while looking in this direction and perhaps admiring the working of this fancifully so-called "savings bank for the tissues," it seems to be forgotten that all nerve sensibility and force depends upon the presence of blood containing the natural amount of oxygen; and that just in proportion as we diminish the proportion of oxygen in the blood distributed to the nerve structure we diminish both nerve sensibility and muscular action. So true is this, that the simple exclusion of oxygen produces a more speedy suspension of all sensibility or profound anæsthesia, than can be produced by the most active anæsthetics known.

Is it not then physiologically impossible that any agent should so far diminish the distribution of oxygen in the arterial blood as to diminish general tissue metabolism and not at the same time diminish the sensibility and action of the nerve structures both voluntary and involuntary? And if so, how can it be at the same time a cardiac tonic and general restorative?

A careful and thorough review of all the facts, social, clinical and experimental, bearing on this subject, will show that the very general belief in the stimulating or tonic properties of small and repeated doses of alcohol and opium is erroneous, being founded on a wrong interpretation of the primary symptoms produced.

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One undoubted source of trouble between the medical witness and the cross-examiner is that the latter, as a rule, limits himself to general hypothetical questions, and requires simple categorical answers, while the former can only speak positively of individual cases, and of these only in a general way. I was once asked if the condition of the blood produced insanity. Any medical man will recognize that such a question is unanswerable. It might produce insanity in one case and not in another. But the lawyer doesn't want such an answer. He demands *yes* or *no*. If applied to the case in hand, the medical expert would only care to say yes or no with full liberty to explain himself, if need be. Here is an instance, reported by Dr. Traill Green, of Easton, of the misapplication of an individual truth in a general statement, which reveals on the part of the lawyer one of three things—dense ignorance, profound knavery or ill-timed levity: In one of our insane asylums there was once a young man who did not believe that he had a stomach or bowels. He said that the food he ate flew out of the top of his head up against the ceiling. The lawyer for the patient said to the doctor, "Doctor, you know that there are a great many sane people shut up in these asylums." "No sir," answered Dr. Green, "I do not know any such thing." The lawyer then said: "You believe this man is insane because he does not know that he has a stomach. Don't you know that a man may be sane and yet not know that he has a stomach?"

In the mathematical sciences, all cases of a class fall equally under the same principle. Thus the laws of falling bodies apply to all bodies alike, both great and small, because the law is founded upon an unalterable basis. In the non-mathematical sciences, a broader interpretation has to be given to a general principle, so as to make it cover all cases of the same class. Physiology says that the number of heart-beats is seventy-six to the minute, and sociology affirms that all men are equal; yet we know that men can claim only a fictitious political equality, and that the beatings of their hearts are as varied as their dispositions. Morphology draws the picture of an archetype after which certain classes of animals seem to be patterned, and psychology teaches that the human intellect is composed of certain particular faculties; but not a single human being conforms to the archetype of morphology, or possesses the full complement of faculties that make up the psychological intellect. The circuits of the planets may be calculated to a fraction of a degree, but the amount of hydrochloric acid necessary in the process of digestion varies with each individual. Law itself is one of the uncertain sciences, and the variability of legal opinions is notorious. We speak of the *science* of law, and yet it is almost impossible to get two authorities to agree upon its simplest axioms. Our entire judicial system is founded upon the inalienable rights of man, but to this day no one knows exactly what those inalienable rights are. When our legal friends shall have affirmed for us the principle of States rights which will be applicable to all Governments alike, we will be able by that time to define for them the minutest boundaries of insanity. When they shall have defined for us so simple a thing as personal liberty, we will have reached a stage of knowledge that will enable us to give them a faultless description of the digestive process. Whatever has to do with the moral or physical nature of man is largely a matter of opinion, since the mobility of the subject renders the superstructural science unstable. It would seem, therefore, that their own disagreements would teach lawyers to make sufficient allowance for the disagreements of doctors. When a lawyer formulates a principle, he means that it is true in the main, but liable to many exceptions; so the physiologist and clinician affirm certain general facts, which, however, may not hold good in special cases. While each case that comes under a medico-legal examination must be studied by itself, the study will be greatly facilitated by the recognition, on the part of the court, of certain medical principles which apply in a general way to the case in hand. Our courts are too prone to refuse general statements, and to demand only categorical answers. It is obvious this must lead always to discord and disappointment.

We all know what an annoyance the *personal equation* has ever been to so exact a science as astronomy.

So different are the visionary powers of the observers of the heavens, that it is wellnigh impossible for them to make their calculations harmonize. Every variety of mechanical contrivance has been invented to act upon the eye and ear so as to render perfectly uniform the observations of two or more astronomers; but all in vain, for there is always a slight difference in their mathematical calculations, almost infinitesimal at times, which nevertheless manifests its influence, and is the result solely of the difference in the observers' physical constitutions. Yet we call astronomy an exact science, and rejoice that the personal equation is operative at least only on one side of the question, namely, that of the observer. In the sciences based upon the study of man, the personal equation is a more obtrusive factor, and exerts its unfortunate influence on the side of both the observer and the observed. Men are not machines for the conversion of food into force, as physiology sometimes metaphorically asserts. Even the involuntary functions of the organism, such as digestion, respiration and circulation, are to a large extent under the control of the mind. A wave of passion or a dream of pleasure will so affect them as to nullify all efforts towards the accomplishment of rigid comparisons. Man is apparently a free agent, and one would think he could sometimes place himself in a condition comparable to some previous condition; but even that is impossible, for both waking and sleeping he is subject to the vacillations of his own mind. Never can it be said that he is twice the same man. It is absolutely absurd, therefore, to assert or to expect positive physiological facts. The waves of the ocean never repeat themselves, and the waves of vitality oscillate with an ever changing movement. Anatomy is perhaps the most exact department of medicine, and yet the surgeon is rarely startled at finding an anomalous artery or a misplaced organ. The chemist has analyzed and solved the composition of the body, but a nervous shock or an inherited trait will at times overthrow the absolute truth of his nice calculations.

When we approach the examination of the body, both in health and in disease, and fix our reliance upon the answers of the subject in regard to his own subjective states, the personal equation rises into a mountain and we almost despair of ever being able to scale it. Sensation is one of the primary functions of nervous matter and yet in the examination of nervous diseases the sensory symptoms are almost valueless. Careful neurologists are only too glad to discard the sensory symptoms entirely, if by any possibility they can diagnose a disease through its motor or other signs. No two individuals, sick or well, experience the same sensation in exactly the same way. A slight pain is a terrible ordeal to one, while the agony of the rack is but a pleasurable martyrdom to another. Add to all this the influence of the personal equation on the part of the observer, and the wonder is that medical science has established as many positive facts as it has. So vast is the interval between an Albrecht von Haller and a Caspar Hauser, between a Mettus Curtius and a Charles Guiteau, that an almost limitless scope is afforded for the exercise of the personal equation.

All science therefore, in which this factor arises into such extreme prominence is largely a matter of opinion: and the greater the influence of the personal equation the wider the latitude for the differences of opinion. Hence, in my judgment, medical testimony should always be confined solely to the expression of an opinion. The expert should be given a verbal or written statement of the facts in the case, and his opinion asked merely in connection with the facts thus collected and presented by the court. In cases of insanity this will eliminate the personal equation factor from the side of the subject at least, and I fancy it will lead to a greater uniformity and accuracy of diagnosis between the several experts consulted. In some special cases it might be more desirable to have the expert confronted by the patient, but in a large number, perhaps the majority, this would be unnecessary if the expert were given a succinct and complete account of the subject's past history, actions and general mode of life.

While medical expert testimony is becoming more of a necessity every year, and experts are liable to be summoned into court to testify in regard to any medical matter, questions in regard to mental disease will probably continue to far outnumber all others.

It may not be true that insanity is increasing beyond the proportionate increase in the population; nevertheless, more cases of insanity are being brought to popular notice than formerly. This is explained in many ways. The modern recognition of insanity as a disease and not as a mere disgrace, coupled with the fact that better methods of treatment are employed by our modern asylums, is inducing families to send their afflicted ones away from home more readily than they would have done in earlier days. We hear therefore of many more mild cases that formerly were kept more or less secluded beneath the parental roof. In the second place the higher grade of our modern civilization and its keener intellectual competition illustrate in a more glaring manner the distinctions between sanity and insanity. Finer shades of mental disease are being recognized to-day than formerly. Eccentricities and irrationalities are awarded their proper credit in the sum total of mental equilibrium. While we need not go as far as Lombroso in his peculiar estimation of genius, we must nowadays, nevertheless, regard certain phenomena of genius as an evidence of mental deterioration rather than as a special favor of the gods. Superstitions and absurd beliefs receive less consideration at the present time because we now demand a more uniform distribution of the mental faculties as the proof of a well-balanced mind. A Nero or a Caligula would be assigned a cell in an insane asylum to-day much more readily than in the brutal period of the Roman civilization. The sanity of a Guy Fawkes or a Jean Marat would undergo a closer scrutiny than in the days of their notoriety.

Criminal insanity is quite a modern study and its development is largely due to the higher intellectuality of the nineteenth century. Finally our profound ignorance of the nature of mind as well as of its pathology in disease renders all questions in regard to it a luxurious field for disputation. To decide whether an individual is insane or not is so much more difficult than the decision of most other medical questions, that criminals hasten to avail themselves of the plea of insanity, and thus introduce more cases of this sort than any other into the courts. Lawyers come in contact with more forms of real or assumed insanity probably than any other variety of medical trouble. This is unfortunate for the maintenance of the highest estimation amongst our legal friends for expert medical testimony. There is no department in all science so difficult, so abstruse, so little known as that which has to do with the mind and its diseases. In fact we may almost say that with one or two exceptions we know nothing of mental *diseases*, for most of our knowledge in this respect has to do merely with *symptom-groups*. Typhoid fever, diphtheria and variola are positive entities, separate and distinct from one another. We are familiar with their symptoms and their underlying operative causes. But of the mental diseases, we only know certain combinations of symptoms, which, however, are rarely identical in all similar cases. We talk of mania, monomania, paranoia, melancholia and all their sub-varieties, but we rarely meet two cases that are at all identical, nor are we able to say what is the precise physical condition that gives rise to their respective symptomatology. This deficiency cannot be laid entirely at the doors of medicine, for all the sciences that relate to man are interested in the solution of the human mind. We say that the brain is the organ of thought, but as the brain is in more intimate connection with all parts of the body, it is a question whether the mind is not, after all, coextensive with the entire organism. A last analysis of the intellectual faculties shows that they consist of motor and sensory phenomena or their residual representations, so that the very existence of these faculties is dependent upon the present or past activity of the organs of sense and motion. Hence we not unfrequently have cases of delirium and insanity dependent upon physical causes quite remote from the cerebral centers, and mental diseases are thus seen to be the result often of well known physical ailments. The personal equation is especially here a momentous factor.

Add to all this the fact that the insane can and frequently do feign insanity, as Dr. Kiernan has shown, and the difficulty of these questions is tremendously enhanced. The *primaire verrucktheit* of [illegible] Germans, the *manie raisonnante* of the French and the *monomania* of Spitzka is the form of psychosis that is prone to feign insanity when accused of a crime, thus rendering the diagnosis of the primary trouble doubly obscure, because of the apparent rationality of the patient.

The whole question is immensely involved, and any dogmatic assertions will only result in a display of foolishness. This is one of the reasons why the insanity plea is so popular with the criminal classes. Lawyers, therefore, cannot justly demand, nor medical experts give precise definitions. Opinions only should be required in the present state of our knowledge, and these opinions should be considered merely as an incident in the trial, and not as an integral part of the testimony for conviction or acquittal. Having once learned the medical opinions in a case, the court should decide whether the individual is insane or not. If he is declared insane, he should be acquitted at once and sent to an asylum; if he is found to be not insane, all further trial as to his mental condition should cease, and he should be subjected to the same civil process as any other sane man.

The uncertainty of our knowledge in regard to mental diseases, and the greater value of medical expert testimony the more nearly it approaches an opinion, carry with them the conviction that the expert should be granted full liberty to express all that he knows and desires to say. One reason why expert testimony is so much of a sham under the present system of engaging it is, that the opposing counsel form practically the medical opinions for the court, and simply make use of the experts to support their particular views. It is proverbial that doctors dislike so much to go upon the witness stand that they often endeavor to shirk their duty in regard to signing certificates in cases of insanity that fall under their observation. They know beforehand that their utterances in court will be throttled, and warped, and misconstrued in every conceivable way, and in the end made to express the very opposite of what was originally intended. This was illustrated most forcibly in the trial of Guiteau. As Dr. Mills says, "the defense was conducted in such a peculiar way that only one of the numerous experts called was examined at any length. To most of them was put a hypothetical question, the chief point of which was the assumption that the homicide had been committed under the delusion of divine inspiration. No effort was made, except in the case of Dr. Spitzka, to elicit the special opinions of the experts for the defense or to obtain the results of their examination of the prisoner."[1] The whole trial reminded Dr. Channing of "what a trial might be if a patient with chronic mania were brought in from an asylum and tried for murder." And Dr. Barry, who claimed to know something of the inside working of the trial, said that Guiteau "was put through after the way they kill hogs in Chicago." It seems to me that this monstrous wrong can only be overcome by having the expert engaged by the court, for the purpose merely of instructing the court, and not in any other way to take part in the trial.

In conclusion, then, I would plead, under the present system of engaging expert testimony, for a broader latitude of opinion among the legal fraternity in behalf of the medical expert. Exactness is impossible in the present state of knowledge, and it is rendered even more impossible by the methods adopted for the examination of the expert. I would urgently favor, therefore:

1. The engagement of the medical expert by the court and not by the opposing counsel.
2. The giving of the expert testimony in the form of a written opinion based upon the facts of the case as collected and presented by the court; this being supplemented in certain special cases, and at the discretion of the court, by a personal examination of the prisoner by the expert.
3. The entire freedom of the expert to give a full and complete opinion to his own satisfaction.

4228 Greenwood Ave.

HEAT IN THE TREATMENT OF SYPHILIS.—Dr. Ausass (*Jour. des mal. cut. et. syph.*, January, 1892), presented before a society a young man, 17 years of age, who had become infected from a wet-nurse. From the age of 15 years on he had had a persistent headache, which yielded neither to mercury nor to large doses of iodide of potassium. Residence in a warm climate improved him a little. The doctor then ordered daily hot baths in combination with mercurial friction, and obtained a brilliant result in a very short time.

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[1] Address before the Penn. State Medical Society. Transactions, 1882.

ABSTRACT OF AN ADDRESS,

Delivered at the opening of the Twenty-second Annual Meeting of the Medical Society of the State of California, April, 1892.

BY O. O. BURGESS, M.D., President,
OF SAN FRANCISCO.

VALUE OF MEDICAL SOCIETIES.

With the rapid advancement of medical science—due largely to the labor and experience of specialists in its various departments—the value and importance of society proceedings are becoming better and better appreciated and understood. In this connection it is gratifying to see how we, in this distant State, are keeping abreast of our more favored fellow-workers in and near the great medical centres of the East. Activity, intelligence, close observation and hard study are factors in our society work which are certain to make themselves felt, and which are sure elements of success.

ADVERTISING.

They who contribute most of valuable material to society proceedings are contributing most to their own professional honor and success. They are advertising their knowledge and ability to the profession; and every medical man knows and feels the value of the respect and good will of his professional brethren. He who would rise above the common level must not only have the requisite ability, but he must make known that ability to the profession, and to the public as well. These are times when the world moves with startling rapidity. The slow methods of former years, when only now and then a name and a reputation came up out of the murky level of mediocrity, have given way to the active and aggressive methods of to-day, by means of which vastly increased numbers force their way up to justly achieved notoriety and distinction. Given the talent and the education, the rest is done by hard work and advertising.

They who teach in the schools and clinics; who operate before classes and on-lookers; who write valuable treatises and intelligent articles for the journals; who read practical or interesting papers before societies, and who take an active and intelligent part in the discussions which arise there—all these advertise themselves whether they will or no. Through those who hear and see these things, and much more largely through the reports of the medical press, their names, their sayings, and their doings, are sown broadcast throughout the profession. In this way comes rapid distinction and success to those of recognized talents and acquirements.

Then, again, the daily labors of the painstaking and conscientious practitioner, who is careful to do his best for every case that comes to him, are an advertisement of his worth, which is sure to bring him reputation and work. To advertise, to keep one's self before the public, is as necessary to the physician as to any other man—and these are legitimate methods by which it may be done.

But now come, pushing themselves into the accepted order of things, other methods of advertising, which address themselves directly to the public through the daily press. The remarkable eagerness for news developed in the modern public mind, and the astonishing enterprise, activity and ingenuity displayed by the press in supplying the demand, has created, among other things, a singular and insatiable craving for what may be characterized in a word as personality in journalism; and, amid the innumerable interviews, notices and contributions of persons notable or notorious, the medical man finds a place with rapidly increasing frequency. The omnipresent and eager news-gatherer finds grist for his mill in reports of injuries, surgical operations and interesting medical cases, and it is only natural that he should often include the names of professional men concerned in these reports.

As society was shocked at first by the publication of matters held sacred to the domestic circle, and the circle of tattlers immediately surrounding it, so was the dignity and ethical sense of the profession highly offended by personalities such as have just been referred to. But the times are changed. Society is now indignant if the press fails to herald its doings to the world, while the profession has reached a position of half tolerance, half protest, as regards the publication of matters personal to its members; provided, always, that they appear in a proper way and in connection with items of genuine public interest as news. Otherwise they become, simply, poorly masked advertisements, and are apt to return, like the boomerang, to destroy their instigators. The true origin of the code of ethics, written or unwritten, is in the conscience of honorable medical men. Now, conscience is not a fixed quantity, and may be greatly influenced by environment, education and habit of thought. But, although changes in public sentiment may modify the interpretation of codes and creeds, it can never so alter our unwritten code as to render it permissible for a medical man to advertise, in the usual acceptation of that term. But the time will come, if it be not already here, when the discussion of medical subjects and medical men by the daily press will excite no more unfavorable comment than the discussion of other men and other things. Already there is hardly an issue of the great dailies that does not contain from one to many items of medical news, and I believe the day not far distant when their reportorial staffs will each include a regularly qualified medical man, in order to insure the proper conduct of this department of news-gathering. There is a popular demand for medical news and medical knowledge, and it is to the best interests both of the profession and the people that this demand should be properly supplied.

Education of the public in legitimate medicine is its best protection against the deceptive wiles of quackery. And the public press is the great popular educator. But the benefits of the publication of medical news by the daily press are not always to the laity alone. They are often reaped by the profession, and in a very valuable form. Take, for example, the history of Koch's tuberculin. After the news of its discovery had been flashed all over the world, the members of our profession fairly held their breath with eagerness and anxiety to learn every possible detail concerning it. And rapidly as those details were evolved in the great centres of experiment, just so rapidly were they known to the profession in every quarter of the globe. The very rapidity with which the reputation of this discovery was driven through its experimental stages to its death was largely due to the compelling power of the press, that often finds a way of forcing events for which it is waiting.

I am aware that I am upon delicate and debatable ground. And, in order that there may be no misapprehension of the statements I have made, let me repeat, that in my view, it is not now and never will be proper for a physician to advertise—using the term in its ordinary sense—and that to give out or to procure the publication of items which are rather vehicles of personal puffery than matters of interest as news, is the worst form of advertising, because it is masked and underhanded. On the other hand, personalities relating to physicians are appearing and will continue to appear in various forms, and, although still under protest, the tendency of professional sentiment is rather toward toleration of them, under certain restrictions, than the opposite. Finally the publication of proper and reliable medical intelligence by the daily press is rather to be encouraged than condemned.

A SECRETARY OF PUBLIC HEALTH.

In no department of medical science have the labors of the profession been more promptly recognized and more thoroughly appreciated by the public than in that of the preventive medicine. The disinterestedness of these labors is at once apparent, and their value is readily demonstrated by the results attained. So well, indeed, are their benefits understood that to-day the profession stands in an advisory, if not in an authoritative relation to nations, communities and individuals in all matters pertaining to the prevention of disease. In order to increase the efficiency of this work, and to render it more authoritative, there are two movements on foot to which I wish to call your attention. The first is now in the form of a bill introduced in Congress by Senator Harris, Chairman of the Committee on Epidemic Diseases, which provides for the establishment of a National Board of Health, to be under the control of the Treasury Department, and to consist of seven members; these members to be sanitary scientists, appointed by the President, by and with the consent of Senate, and to receive salaries of five thousand dollars each. Three medical officers are to be detailed from the Army, Navy and Marine Hospital Service, respectively, and a legal member is to be assigned from the Department of Justice.

The second movement, and one to which I wish more especially to invite attention, first assumed definite form in a report by a special committee to the American Medical Association at its last meeting. The report ended by asking the adoption of the following resolution:

> *Resolved*, That the President of this Association appoint a committee to memorialize Congress at its next session on the subject of creating a Cabinet officer to be known as the Medical Secretary of Public Health.

This resolution was adopted and the committee was duly appointed. The report just referred to was a most able one, and presented very fully the reasons why such an office should be created, the duties that would pertain to it, and the benefits to be derived from it. Through the efforts of the committee then appointed by the American Medical Association to petition Congress, a bill has been introduced in the House of Representatives by Hon. Mr. Caldwell, which embodies pretty fully all that the committee asked for. It is believed that this bill will eventually supercede that of Senator Harris, above referred to. I am informed that these movements are attracting a good deal of attention in high places. Indeed, my attention was first called more especially to this subject through the publication in the *Medical Record* of the following extract from a letter written recently by Secretary Noble to Dr. Starling Loving, of Columbus, Ohio:

"Individual effort," says the Secretary, "has done wonders in detecting the sources of danger to communities, and the discussion of such discoveries has interested every household. But, liberal as the medical profession is and has, in our country, proved itself at all times to be, it is not fair or polite for us to leave it unsupported and nationally unrecognized. The international communication of intelligence that would follow the organization of a Bureau of Public Health would not only preserve our own inhabitants from many physical ills, but would greatly serve to strengthen the sympathy between all civilized peoples who would correspond and coöperate with us. They would feel the same beneficent influences of the system as we would realize."

These are brave words, and do credit alike to Secretary Noble's heart and head. The profession would be not only grateful for the recognition of its services, as proposed, but proud of the creation of a new goal of ambition for medical men in a Cabinet position as Secretary of Public Health.

In a letter just received by me from Dr. Loving, he says that Secretary Foster as well as Secretary Noble, Senator Sherman, and a large number of influential men outside the medical profession, are working for the bill, which leads to a feeling of some assurance that it may go through, although not without opposition from certain quarters. He adds that he has been informed the President favors the scheme; but how reliable that information may be he cannot say. I wrote to Dr. Loving that it seemed to me that if the State Medical Societies would each appoint a special committee to urge the subject of this bill upon their Senators and Representatives in Congress, it ought to be of material service to the movement. Dr. Loving strongly approved of this suggestion, and forwarded it to Dr. Comegys, of Cincinnati, who is chairman of the committee to memorialize Congress, and one of the most active promoters of the scheme.

I have referred to this subject somewhat at length, because I feel deeply interested in it; and I would suggest the appointment of a committee, or the reference of it to the Executive Committee, to give it consideration, and to report what action, if any, should be taken in the matter by this Society. The text of the Caldwell bill may be found in The Journal of the American Medical Association for April 2, 1892. Since writing the above, I have received a letter from Dr. Comegys, inclosing copies of the memorial, and urging us to adopt it, and communicate our approval to our Senators and Representatives without delay. The urgency of the matter rests in the fact that Senator Harris has stated that the Caldwell bill cannot be favorably reported by his committee (the Committee on Contagious Diseases, of which he is chairman), but that he intends to push his own bill, placing everything concerning public health under the charge of the Marine Hospital Service. The doctor's comment is that Harris is opposed to giving any rank or proper dignity to the medical profession.

NATIONAL LAW, REGULATING PRACTICE.

In this connection, permit me to refer to another subject, which has claimed considerable attention, and that is the need of a national law, regulating the practice of medicine. The principal object of such a law would be to secure uniformity of action throughout the States and territories. Indirectly, it might be made to regulate the standard of medical education to a considerable extent, and thus secure greater uniformity in the curriculum of the schools. A national standard, as to the requirements necessary to a medical education, would possess many advantages. An especial advantage would be obtained by making it sufficiently high to command recognition of American diplomas in all other countries of the world. These are subjects worthy of profound consideration and of intelligent action.

THE PAN-AMERICAN MEDICAL CONGRESS.

I am requested by the Secretary General of the Pan-American Medical Congress to call your attention to that movement. The constituent countries of the Congress include the West Indies and several islands of the Pacific, as well as most of the countries of North and South America. The first Congress will be held in the city of Washington, on the 5th, 6th, 7th and 8th of September, 1893. But it is required that contributors shall forward abstracts of their papers, not to exceed 600 words each, to the Secretary General, Dr. Charles A. L. Reed, of Cincinnati, Ohio, not later than July 10, 1893, in order that they may be translated into the various languages to be used, and published in advance, for the convenience of the Congress. The registration fee for residents of the United States will be $10. No fees will be charged to foreign members. Each member will be furnished with a set of the transactions. The organization of the Congress seems very elaborate and complete, there being no less than 21 distinct sections. I am pleased to note that our distinguished fellow-member and ex-President, Dr. L. C. Lane, has been honored with the representation of this State upon the Board of Trustees. If any action is required regarding the credentials of delegates to this Congress, it may be taken now or postponed until our next annual meeting. It is time, also, to begin to think of the next International Congress.

Our Committee of Arrangements admonishes us that brevity in our proceedings will be necessary to their completion. I will, therefore, set the example, and close with many thanks for your kind attention and indulgence.

LESIONS CHARACTERISTIC OF SYPHILIS IN THE FŒTUS AND INFANT AT BIRTH.

Read before the Milwaukee Medical Society, March 22, 1892.

BY L. BOORSE, M.D.,

OF MILWAUKEE, WIS.

The disastrous influence of syphilis on pregnancy, as frequently shown by the premature expulsion of the product of conception; the excessive fatality of inherited syphilis; and the unfortunate consequences which may be entailed upon the offspring that survive, make the subject one that, in the interest of the progeny of syphilitic parents, merits the special attention of the obstetrician. Carpenter states that of 657 syphilitic females, 231 miscarried, while 426 were delivered at term of living and dead children. Kassowitz asserts that one-third of all children procreated of syphilitic parents are stillborn, and 34 per cent. of those born living, die in the first six months of life. So frequently is syphilis a cause of non-viability and premature delivery, that whenever a woman repeatedly miscarries, or gives birth to a dead fœtus, suspicion of this disease in the parents may be entertained. In view of the fact that, in the absence of manifestations, it is often difficult to obtain a history of the disease in the parents, owing to the grave family complications that vague interrogations are liable to precipitate, and the reluctance of the original bearer of the disease to impart any information that might expose his or her affliction, as the case may be, and thereby compromise the future happiness of married life, the diagnosis of the disease from lesions presented in the fœtus or infant that survives but a short time, would at once establish the proper course to pursue as regards prophylaxis, for the rescue of children in subsequent pregnancies. The diagnosis of syphilis from lesions manifested in the fœtus may also become a matter of medico-legal importance, as in the following case that recently came under my observation: Mrs. K., an apparently healthy primipara, was confined at the full period of gestation. The child, after a few feeble respiratory efforts, expired. Its extremely emaciated condition and cachectic appearance indicated that it was profoundly affected. The skin was livid purple in color, and hung in folds. The body, extremities, palms and soles were covered with a bullous eruption. At places the bullæ had burst, leaving angry-looking erosions; those intact contained a sero-purulent fluid. The husband, having previously entertained a suspicion of his wife's chastity, was aroused by the appearance presented by the child, and demanded an opinion as to whether or not the condition was due to syphilis, with a view of instituting proceedings for a divorce if it was so pronounced. The diagnosis of syphilis in the fœtus and infant at birth leads to a consideration of the earliest manifestations of the disease. As the disease in the offspring bears a certain relation to the state of the disease in the parents, many children may not only survive, but even present at birth the appearance of health, and not until a later period of their existence manifest signs of the disease. In the great majority of those that survive, characteristic lesions of the disease appear within the first three months.

Miller, who analyzed one thousand cases with reference to the period at which the disease first manifested itself, found it to occur, in 64 per cent., in the first month, and in 22 per cent. of the cases in the second month. In 24 per cent. the first lesions occurred in the third week. Kassowitz, who analyzed four hundred cases, found the first lesions, in 53 per cent. of the cases, in the first month, in 32 per cent. in the second month, and in the remaining 15 per cent. in the third month. The disease, as it occurs in infants who survive for a longer or shorter period, presents lesions that closely resemble the secondary manifestations of the acquired disease in adults. There are few lesions manifested after birth which can be regarded as characteristic of the inherited disease.

Are there any characteristic lesions presented in those cases in which the intensity of the infection causes the destruction of the fœtus *in utero* or soon after birth? Cazeux says: "These children, when examined immediately after delivery, generally exhibit no lesions which can be attributed to syphilis, though in some traces of the disease are evident." J. Lewis Smith quotes the experience of M. Culliner in evidence of the infrequency of syphilitic manifestations at birth; who in ten years' attendance at the Hôpital de Lorraine, met only two cases. Sevestre, who has prosecuted the study of the early lesions of inherited syphilis with special reference to the diagnosis of the disease in the fœtus, states that in some cases the lesions are sufficiently characteristic, but in the majority, the evidence would not justify a positive diagnosis. Barthélémy found no evidence of the disease, either macroscopic or microscopic, in fourteen out of twenty-eight autopsies on syphilitic fœtuses, although death was undoubtedly due to syphilis.

Hirst states that he has never failed to find in a syphilitic fœtus the characteristic bone lesions to which Wegner and others have called attention. The lesions found in stillborn children, and those that succumb soon after birth, may be divided into two groups: the superficial lesions, and the pathological tissue changes affecting the different viscera and bones. The lesion of the skin most commonly met with in the fœtus and infant at birth, is the bullous syphilide or pemphigus. It is regarded as a manifestation of grave import, and frequently coincides with profound visceral lesions that rapidly reach a fatal termination. The eruption generally occurs on the extremities, affecting particularly the palms and soles, where the blebs frequently burst, leaving angry-looking erosions that somewhat resemble the palmar and plantar syphilides of the acquired disease. According to Roese, 1876, pemphigus is always of syphilitic origin. Cases of non-syphilitic pemphigus at birth have been reported by Krauss, Desruelles, Hervieux and others. The bullous syphilide may exist as early as the sixth or seventh month of intra-uterine life. The syphilitic bullous eruption is distinguished from the non-syphilitic pemphigus by its situation, showing a predilection for the palms and soles. The blebs are smaller, and their liquid contents of a more purulent character; their bases also present a more deeply colored and irritable appearance.

The erythematous syphilide or roseola is also an early lesion, and may be present at birth. According to some writers, this eruption is very uncommon. It makes its appearance first upon the lower part of the abdomen, extending later to other parts of the body. It begins as oval, unelevated spots, of a pale red color, which disappears on pressure. These spots often coalesce and cover extensive areas. The pale red color is gradually succeeded by the coppery staining, constituting the so-called "macular syphilide." Bouchut reports a case of a seven and a half months fœtus with an eruption of a coppery color upon the legs and arms, with other evidences of syphilis. A diffuse erythema upon the soles and palms is regarded as very characteristic of this disease. When exposed to irritation, the erythematous patches are prone to become fissured, and may be converted into mucous patches. The papular syphilide usually develops at a later period *during the first weeks of intra-uterine* life, although its appearance at birth is occasionally observed. The papules are small, rarely exceeding the size of a millet-seed. In color they vary from a pale red to the coppery color characteristic of syphilitic lesions. The papules may be few in number, distributed over the trunk and extremities. The vesicular syphilide is a rare lesion of inherited syphilis, but is sometimes found associated with the early stage of the bullous eruption.

An aborted syphilitic fœtus is usually macerated, but this condition in itself is not characteristic; other evidence of the disease must be found before a macerated fœtus can be pronounced syphilitic. Birch-Hirschfeld, who has made a study of the lesions of syphilis in stillborn children, found that of the macerated fœtuses 70 per cent. presented undoubted evidence of syphilis. While the cutaneous lesions, if present, and the general cachectic appearance, may indicate syphilitic contamination, the most constant and characteristic lesions are to be found in the viscera and bones. The organs in which the lesions are most readily recognized are the liver, the spleen, the lungs and the thymus; other organs, however, as the pancreas, kidneys, and even the brain, may present syphilitic changes. Gubler, in 1852, gave the first authoritative description of the syphilitic lesions of the liver. The affected liver is always enlarged, and changed in color and consistency. The hepatic tissue presents the peculiar yellow hue and semi-transparency of flint. In consistency it is much harder than the normal hepatic tissue. When compressed between the fingers it offers a greater degree of resistance, and tears without allowing the imprints of the fingers on its surface. Its elasticity is also greatly increased. Scattered throughout the parenchyma are small, opaque granulations, which Gubler has compared to grains of millet. The opaque granular bodies can readily be seen at a considerable depth from the surface, owing to the semi-transparency of the tissue. The microscope reveals extensive proliferation of fibro-plastic tissue, enclosing the granular bodies, which according to Cornil, are formed by an aggregation of embryonic cells. Of the different organs, the spleen is most often attacked. It is always more or less enlarged; this enlargement, according to Dr. Gee, is due to simple hypertrophy with thickening of the capsule. Depaul was perhaps the first to give a detailed account of the lesions of the lungs. The disease manifests itself in these organs by the presence of indurated nodules or small spheroidal tumors, varying in size from a pea to a filbert. They may be disseminated or in groups; invading one or more lobes. The pulmonary tissue may be more or less indurated, due to a proliferation of the interstitial tissue, or the condition of lobular hepatization known as pneumonia alba may be present. The lungs in this condition are voluminous, filling the chest cavity, and bearing on their surface the impress of the ribs. In color they are gray or white on their surface, and on section. The condition is one of fatty degeneration. The alveoli being encroached upon, the lungs are impervious to air.

The pleura is always thickened and inflamed. The syphilitic change of the thymus gland, first recognized by Dubois, consists of the presence of pus in the parenchyma, without any apparent change in the color or size of the organ. The pancreas presents changes analogous to those of the liver. The organ is enlarged, its weight sometimes greatly increased, and in consistency its tissue is much firmer than normal. On section it presents a whitish, glistening appearance. Microscopically, the change is found to be a proliferation of the interstitial connective tissue, which may be so extensive as to compress the acini and destroy the secreting function of the gland.

In connection with the visceral lesions, effusions into the serous cavities are frequently met with. James Y. Simpson was the first to call attention to peritonitis as an indication of inherited syphilis.

The osseous system affords the most constant and characteristic lesions of the disease. The osseous lesions have been studied and described in detail by Parrot, Ruge, Wegner and others. These lesions may exist alone, and constitute the only manifestation of the disease. As seen in stillborn infants and those that survive but a little time, many, and frequently all of the long bones are affected. The long bones of the extremities, excepting those of the hands and feet, are most commonly attacked. The lesion is an osteochondritis, resulting in a necrotic condition at the line of junction of the cartilage with the bone. Osteophytes are sometimes found, deposited around the diaphysis of the long bones, and beneath the periosteum of the scapula and iliac bones.

In children who survive, other changes of the osseous system may supervene. The possibility of making a diagnosis of syphilis from lesions manifested in the offspring at birth, depends upon the intensity of the syphilitic contamination. In children that survive, the lesions presented at birth will rarely justify a positive diagnosis of the disease. In stillborn children and those that live but a short time, lesions characteristic of the disease may generally be found in the bones and different organs, particularly the liver, spleen and lungs.

DISCUSSION.

Dr. J. F. Tower: I had about a year ago sent to me an ovum, by a doctor out of the city, which was supposed to have been the result of a miscarriage by a syphilitic patient. I suppose most of you have seen the fœtus that it contained. The ovum had a very peculiar appearance. I have not seen very many ova at exactly that age, or in that stage; still, it was different from any I had ever seen. It was rough, nodular, very dark purple or bluish in color, blood-vessels very much larger than are usually seen, and the membranes so thickened that they were hardly transparent at all. The fœtus does not seem to be affected at all; I should say that it is possibly about nine or ten weeks old. The history of the case was something like this, if I remember correctly from a letter I received at the same time—that a young woman got syphilis from some of the neighbors, and about two months following the initial lesions of the syphilis she became pregnant by her husband, and ten weeks following she miscarried, and that is the product.

Dr. H. M. Clark: I would like to ask Dr. Boorse if there was a perfectly clear history on both sides of freedom from syphilis?

Dr. Ernest Copeland: I would like to ask the doctor if the placenta, in many of those cases, would not give us the desired information even where the fœtus does not, through examination either microscopically or macroscopically, or both?

Dr. Boorse: In regard to the lesion of the placenta, I think Zilles has made a special study of that, and in some cases has found lesions in the placenta.

The case that I stated had rather an interesting history. The husband was forced to marry the girl, and the child was born two months after marriage, and after his marriage the husband met an acquaintance, and this acquaintance chided him for having married the girl, and accused his wife of having given him syphilis. The matter was settled in court and the statement retracted, and all went well until the birth of this child, and the condition of the child aroused the suspicion of the husband, and he threatened to sue for a divorce. There were no lesions or evidences of syphilis in the woman at the time; at least, I could find no evidences of the disease.

The President: I would like to relate a case, unique in my experience. It happened a number of years ago, when I was practicing in the East, and it bears somewhat upon this subject, although perhaps not strictly in conformity to it. I attended a young married woman in confinement, who had been married about two years. She was highly respectable and of good social standing, as was also her husband. Her labor was normal in every way, the child was healthy apparently, but on the second day after the birth of the child, the husband presented himself at my office and complained of some difficulty of a catarrhal nature, and asked me to examine his nose, which I did. I found an ulceration through the septum—an opening—and considerable destruction of the cartilaginous tissues in the nose, and at that time I felt pretty positive in regard to such matters, and I surprised my patient somewhat by asking him the question, how long ago he had contracted syphilis? It was a pretty bold question, under the circumstances, to ask, but I felt so sure of my diagnosis that I thought the best way to get at the truth, and to get an acknowledgment from him in regard to the history of the case, was to act boldly. He looked at me for a moment, and finally acknowledged that about seven years before he had contracted syphilis. He had been treated for a number of years, and supposed he was well. He had not been treated for two or three years prior to this time, and had married and supposed he was entirely free from the trouble. Less than a week after that the child was completely covered with the syphilide, commencing, I think, if I remember rightly now, at the lower part of the abdomen and extending over the body, involving the palms of the hands and soles of the feet, with more or less coryza, snuffles. The child was put under mercurial treatment, and the man was put upon syphilitic treatment with iodides, and improved considerably himself. The child apparently recovered, so far as the acuteness of the lesions was concerned, and no appearance of the disease existed at any time in the mother. I could not detect any symptoms of the disease whatever in her case. The child was kept under observation and treated, and apparently thrived and did very well. The husband improved considerably, and his ulcerations healed under large doses of iodide of potassium; still his wife was entirely free from any symptoms. The case passed out of my observation and the family went to Nova Scotia. Shortly after their arrival there I was in communication with a physician in attendance on the family, stating that the husband had evidences of syphilitic ulcerations in the brain and was evidently beyond hope of cure, and in fact died a short time after that, and I think about two years after the birth of the child. No history has ever been obtained and none given by the physician in attendance, that the mother was ever affected in any way. The history of the child after that I do not know. To me it was an interesting case, and I would like to hear if any other members have met with similar experiences.

Dr. Copeland: It is a very unusual thing, and denied by some, that the disease is ever transmitted by the father without the mother being affected.

Dr. U. O. B. Wingate: It is unique in my experience.

Dr. H. E. Bradley: I attended three women in confinement, and each of the fathers had syphilis. One of the mothers had syphilis, and none of the youngsters had ever shown any sign of it, and I do not know as I ever saw a syphilitic child born yet.

Dr. F. Shimonek: I have three cases in mind now that are rather interesting. The first was a case of gumma in the palate of a man. He came to me with the soft palate affected and a perforation through the hard palate. He had three children, all alive and all well.

The next case was where a man contracted a chancre in the old country nine years ago. He was in the military hospital there, and treated for chancre. He came here and has been here now for several years. He came to me with a sore throat. I found a large gumma in his soft palate, just perforating through a little white spot there. I put him under large doses of iodides, and the whole swelling disappeared with the exception of that little hole, which remained there. His children are all well, and his wife is well.

The third case is more interesting still. It was that of a man who had a large family of children, every one of which is a perfect picture of health. He came to me with a sore in his hand from which he had suffered for two years—I think it was on the left hand. He had tried all sorts of things, and by the appearances, the color of it, with destruction of skin, I judged that it was syphilitic, and I asked him outright how long since he had had chancre? He said thirty years ago. I put him on big doses of iodide, and the thing disappeared in the course of a few weeks completely.

The President: Do you not fear a return of the disease?

Dr. Shimonek: Likely enough.

The President: That goes to show undoubtedly that in a good many constitutions syphilis is incurable, while in others it is very easily cured, perhaps.

SOCIETY PROCEEDINGS.

Philadelphia County Medical Society.

Plymouth Meeting, Montgomery County, Pa., April 13, 1892.

President John B. Roberts, in the Chair.

Hiram Corson, M.D., read a paper entitled

PNEUMONIA AND ITS TREATMENT.

What is pneumonia? That question correctly answered, we will be prepared to treat it. Professor George B. Wood. of the University of Pennsylvania, one of the most accurate describers of disease and a practitioner of great eminence, to whose graphic descriptions of disease many of you have listened, says in his *Practice of Medicine*, that "pneumonia has three stages, and is universally applied to inflammation of the lungs. In the first stage the lungs are merely engorged with blood, and the air-cells partly filled with a seromucous, somewhat bloody effusion. In the second stage a plastic extravasation has taken place, and the cells are filled with more or less concrete and bloody lymph. In the third stage the place of the plastic secretion has been supplied by a purulent fluid." Dr. Wood was a truthful man, had great opportunities in the Philadelphia Hospital to see the condition of the lungs in the different stages described by him, for they may all be present in a lung at the same time, when the disease continues to embrace fresh portions of it. In that I doubt not he is correct. But as the subject which now engages our attention is one of great importance, I beg you to bear with me while I quote from another author. Dr. G. R. Martine, of Glens Falls, N. Y., in a paper read before the American Medical Association, in June, 1889, published in its Journal September, 1889—a paper remarkable for its accurate description of the disease as it exists in cases involving much of the lung, and for erroneous deductions in relation to treatment—thus speaks:

"The first abnormal symptoms, after the premonitory chill, is the quickening of the pulse and the consequent increased flow of arterial blood. Now, if we could take a microscopic view of the minute arterial ramifications in the lung structure, we would discern a distention in the caliber of the air-vessels in order to accommodate the augmented flow of blood; and if we would then glance at the veins we would observe the plasma layer rapidly filling with white corpuscles, and the walls of the veins, irritated by the friction of increased circulation, would exhibit, here and there, white corpuscles adhering to their tenacious sides and finally penetrating their walls. A glance at the capillaries would show not only the white, but also the red corpuscles forcing their way through the overstrained capillary walls until the surroundings become engorged by their extravasation, and hepatization has commenced." Now, if we bear in mind the condition of the lungs as described by the writers, we must believe that pneumonia is first a congestion, then an inflammation, and if that be not arrested suppuration takes place. Dr. Wood says: "It has been doubted whether a cure is ever effected in this last stage."

We are now brought face to face with the disease. Is there anything we can do to remove the congestion? The patient has been sick less than twenty-four hours, he is not yet expectorating bloody sputa, and many of the opponents to blood-letting say this disease cannot be aborted; that, like measles, it has a course to run, despite all interferences; that it is a constitutional disease, and that if we can prevent the congestion from being too suffocative, the inflammation from involving too much of the lung, we may let it run its course. The members of our profession are divided into two classes: those who believe that the disease may be aborted, *i.e.*, arrested in the congestive stage if early called, and in the stage of inflammation before suppuration has taken place; and the much more numerous class, who believe that it cannot be aborted; that a case, even if it be in its incipiency, must go on—should be watched by the physician, and shorn of its power to take life, but be allowed to go on until a crisis is reached after a positively fixed number of days. Physicians of the first class aim to relieve the overloaded and suffering lung by the abstraction of blood, by means of the lancet, from the veins of the arm: and those of the second class, who boast that they "never bleed" in any disease, depend on giving relief by reducing the increased action of the heart with medicines which have that effect. But the members of this latter class are greatly divided in opinion as to the proper medicine to be used to hold the heart in check; what one regards as being very useful and safe, another considers dangerous—more dangerous than the disease, and withal inefficient—yet all speak from experience, each one with his remedy. Experience is a harmful thing, as a reason for continuing to practice a certain course, unless it has been successful experience. It reminds me of a case: I had attended a woman in her confinement, and, as she expected to have the child raised by hand, as the phrase goes, and had read my paper on "Food for Infants," she desired me to speak to the nurse about her mode of feeding the child; so, when she appeared, I said: "Nurse, do you know how to feed a child so as to rear it without the mother's milk?" "Oh, yes! I have had experience in doing that; my sister had three that I had to raise that way." "Well, how did they come on?" "Oh! very well; one of them lived until it was six months old." Who among us but can look back on measures which we practiced, and which we believed indispensable because we had proved them, as we thought, by a long experience, but which we now see were not only useless but injurious. This, then, successful experience in the treatment of pneumonia is what we should follow. The absence of success, the fearful mortality attending the arterial sedative practice of the "no blood to spare" party; the immediate relief, the successful arrest of pneumonia by blood-letting, during a whole century, should cause the opponents to venesection to cease their abuse of those whose successful experience in the use of it has been testified to by some of the most eminent men of this city and of this country. A few weeks ago I was told by a gentleman holding a high State office, that a physician of whom he inquired concerning the recent death of a prominent man, replied: "Oh! he was murdered by blood-letting." Does this man, who speaks so boldly about a measure of relief of which he knows nothing from actual experience, who never used the lancet in his lifetime, denounce Prof. George B. Wood, Physic, Parrish and the elder Hartshorne, Chapman, Samuel George Morton, Ezra Michener, Prof. Henry H. Smith, the Atlees—John and Washington—Traill Green, Henry Hartshorne, Jackson of Northumberland, N. S. Davis, Prof. S. D. Gross, and hundreds of others who could be named, as conscientious as himself and far more truthful? We have borne this stereotyped abuse long enough. Look at the terror spread over the country now, when these numerous deaths of the best of our people are every day announced, though all were in the hands of practitioners skilled in arterial sedation. Let us now see what the opponents of blood-letting resort to, to save the sufferers from death in this disease. From what I have learned of the present teachings in our colleges, and by conversations with practitioners, the main object is "to keep down the pulse"—that is the phrase. To do this, the most approved medicine is the fluid extract of veratrum viride.

"The object aimed at," says Dr. Martine, "is to hold the pulse below eighty," and adds "*that* is not only what should be done, but what *must* be done to save life." I know full well *that* is not necessary. Scores of times, after I have bled freely, with great relief to the patient and arrest of the disease, the heart, though tamed by the bleeding, continued its pulsations from 80 to 100 per minute, or sometimes even more, for two or three days, and yet the convalescence went on. Again he says: "With what remedies do I hold the pulse at this point (below eighty)?" and adds, "veratrum viride seems to have served one best." To this, Dr. H. A. Hare, who was present at the reading, replied: "A great mistake is made in saying use cardiac sedatives in pneumonia, without recognizing the fact that they are to be used only in the first stage, before congestion has gone on to consolidation; the man who gives such drugs at the middle or end of an attack of pneumonia, might as well stab his patient. Digitalis is to be used at such times." It therefore appears that it is only in the congestive stage that veratrum is to be used. If this be true—and doubtless it is based on experience—how many patients have been sent to their graves by this much used medicine! for well do we all know that it is the most used of all the arterial sedatives to keep down the pulse. And even Dr. Martine has peremptorily declared that it must be kept down, and that veratrum viride seems to have served him best. But it is not only Dr. Martine who disregards the stage of the disease, and uses it in all stages if the pulse be above eighty. I have long believed that nearly all the cases of pneumonia which terminated in death within four days, and I know several such, were hurried there by this patent and dangerous drug. Dr. I. E. Atkinson, of Baltimore, followed Dr. Hare, and said that "the use of veratria in the treatment was not new; it had been several years under trial, and had not received general acceptance." If Dr. Hare's utterances be true, then veratrum viride can scarcely be used at all without killing the patient, for a physician is seldom called until the congestion has passed into the second stage, when, according to Dr. Hare, you might as well stab the patient as to give it. How unerring must be the diagnosis, in order that this medicine may be given without risking the life of the patient. I have inquired of many of the "no blood to spare" class and have rarely found two that have the same treatment. Those who use aconite are afraid to use veratria, while the latter regard aconite as being more dangerous and less efficient. Those, too, who use digitalis are afraid of the two drugs just named, and those who give two drops every two hours denounce others who give large doses of it (10 to 20 drops, frequently repeated) as pursuing a most dangerous practice. Judging from the accusations made by themselves against each other, what safety is there to the patient? The answer comes in saddest tones from homes made desolate by dangerous arterial depressants. To the two classes of opponents to blood-letting spoken of, there are others which should have a passing notice; first, those who rely on the use of sulphate of quinine to keep down the pulse and to diminish the heat of the body. While quinine is, in malarial diseases, an unrivalled medicine and has done valuable service, it is useless, if not really most injurious, in the treatment of pneumonia and other inflammatory diseases. We should feel greatly indebted to Dr. Horatio C. Wood for the experiments which proved to him that even very large doses of that medicine cannot hold the temperature of the body at a low figure. There was so much stress laid on the importance of preventing heart failure, by keeping down the temperature by means of quinine above all other medicines, because of its tonic powers, that Dr. Ripley, the two Drs. Jacobi, and three other physicians of New York City made careful and repeated experiments to determine the value of the drug in that respect, and demonstrated beyond cavil that it is never useful, and often greatly objectionable—really injurious—in the treatment of pneumonia. I have often felt exceedingly thankful to Dr. Wood and the New York doctors for their careful and effective labors in that direction, and greatly amazed that, in the face of the assertions that quinine is useless in pneumonia to effect the purpose for which it is used, some persons still persist in its use. Many lives have thus been lost. The second class of those who fraternize with the arterial sedative practitioners is composed of the whiskey or stimulant practitioners—the physicians who see typhoid and blood-poison symptoms in almost all diseases. I will spend but little time with them. They are belated people, clothed in, and proud of, the cast-off garments of progressive physicians. Let us look calmly at this subject. Are there physicians here who can say that there are medicinal properties in whiskey or in brandy, which, in either large or small doses, warrant us in trusting the life of a patient to their action? It is a serious thing to experiment with human life. No means but those which have proved successful in numerous cases should be used when our patients are struggling for breath, and death hovering over them. There is nothing more saddening to me in the sick-chamber than to see a physician forcing alcoholic drinks on the dying patients, and yet it has been done countless thousands of times, and now ofttimes they are used in the very earliest stages of pneumonia. Dr. N. S. Davis does not believe them essential in any disease. If, then, arterial sedatives, quinine, and alcohol are not adapted to relieve the *congestion* and *inflammation* of the lung, which constitute pneumonia, is there any remedy for that now fatal disease? We know that there is, but not from an experience like that of the nurse already named, nor of another one, greatly experienced, of whom allow me to speak. I was called to a child, lying on the lap of a friend, "because she had had experience with such cases." I said, "The child seems very sick." "Yes," she replied, "it has summer complaint, and it will die." "How do you know it will die?" "Oh! I have had experience; I have had ten of them with it." "All your own children? did they all die?" "Yes." "Did you have the same doctor for them all?" "Yes." "Well, your experience is worth nothing." I treated the child, and, to her disgust, it was soon well. Her experience is a fair type of the experience of those physicians who go on with the same fatal treatment, lose one patient after another, and speak of "experience" in treating the disease.

But now a word about those who "murder" their patients by bleeding them. What are the objections urged against blood-letting? and by whom? The first objection is, "No one has any blood to spare." If this be true, then it embraces all other objections, and none need be named. This certainly means that in health, as well as in disease, the loss of an even small quantity of blood would be injurious to the loser of it. It means more than that—means, as is boldly asserted, that it is a permanent injury to the body, the bad effect of which is seen in the permanently weakened system of the person. Thousands of facts disproving this, and which are daily before our eyes, count for nothing. One would suppose that if half a dozen, or even one, of the respectable, truthful men here should declare that he had often bled persons in various diseases with the greatest benefit to them, nothing more would be needed to prove the falsity of the declaration, "No blood to spare"—a cry so senseless, so false, that no decent man should utter it.

The very first act of these objectors after the birth of a child in cases attended by them, is deliberately to cut the cord and waste two ounces of blood that ought to have passed into the body of the child.[1] But there is another objection urged, viz., that even in the earliest stage of the disease under consideration, though some relief may be obtained, no blood should be taken, lest it should leave the patient too weak to resist the exhaustion of a later stage—

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[1] See Transactions of the Penn. State Med. Soc. for 1872, p. 154.

leave him in a condition in which even whiskey and rich food would, though *pushed*, not be able to save him from death.

Is it, then, dangerous to take blood from a pneumonic patient?

This is the cry and the charge of those who have never seen a patient bled, and yet who have known its safety and value to be testified to by some of the most eminent men who have ever lived in this century or preceding ones. In my last four papers, published in the *Medical and Surgical Reporter,* I have given a few cases reported by the Conshohocken doctors, which were bled freely, and were so successful that opposition to venesection should be silenced in those who read them. I will now speak of some seen by myself, and in doing so will present some views which I have long held:

On February 16, 1887, I was called to see a physician two days after an acute, serious attack of pneumonia. I found that he was under treatment by one "who never bleeds in any disease." He was expectorating the bloody, "rust-colored, prune-juice" sputa, a quantity of it being in the basin; had great oppression, and that peculiar sense of great weakness so constant an attendant in pneumonia when the obstruction to free breathing exists. I had to wait nearly three hours for the return of the physician, and when he did come he was opposed to bleeding, and refused to accede to it, but proposed that the patient choose whether or not he would be bled. The patient knew well our different modes of treatment, and promptly said, "I will be bled." I asked the doctor to remain, and, slipping another pillow under the sick man's head, I drew blood until I found the pulse yielding in *force*, and knew that faintness was approaching. Withdrawing the pillow to lower the head, I closed the vein and took a seat. In about ten minutes I inquired, "How do you feel?" "I am much relieved, I think it will do me great good." This was at noon. Went again in the evening; he was pretty comfortable, breathed much more easily, and had *not coughed up the least particle of blood or rusty sputum* since the bleeding. The distended blood-vessels were relieved of their fullness, and "the slow exudation from the inflamed vessels," spoken of by Dr. Wood, was no longer forced through their coats. Would one or twenty doses of arterial sedatives have produced that effect? Having bled my patient, what next did I do? Nothing, but told him that I would see him in a few hours.

And here let me say that, in the case already alluded to, when I saw by the papers that he had been bled, I said, "In all human probability he will die!" "Why?" was asked. "Because he was *timidly bled by one unused to venesection and fearful of it,* and because the other depressing, arterial, sedative treatment will follow it, and the patient will suffer from their poisonous, depressing effects."

To return to my case: When I saw the patient a few hours afterward I found him pretty comfortable. I directed one Dover's powder, to be repeated in the night, if need be, because of pain. Next day a mild diaphoretic was administered.

Two days after this a physician who, as a neighbor, had given much attention to his sick friend, asked me: "How do you find your patient?" I said: "He is well; he needs only a few days in bed to regain his strength." I left for home, and he went to the patient and said to him: "The doctor told me just now that you are well. What was it that cured you; was it that blood that came from your arm?" He replied: "The blood did not come from my arm; it came from here," laying his hand on the affected side. "I felt it going from here as it went into the basin." How strong this testimony, given by a physician who felt in his own person the relief obtained by venesection! How confirmatory, too, is this of the testimony of Dr. Gross, the elder, who, in a discussion had in the State Medical Society, illustrated the effect of venesection in this way: "Should a man have an inflammation of the conjunctiva, and the capillary vessels be so injected that the blood was of a deep red color; and then he, being in a sitting posture, should be bled largely, the blood would be drawn from the capillaries, and the redness disappear. Just so does it draw the blood away from the capillaries of the congested and inflamed lung." Veratrum viride in doses large enough to keep the pulse below 80, would not produce the least relief to the distended capillaries. Having bled the patient, if in a few hours there is not much relief, he may be bled again, if needful, and even more than once. But what of local measures? Do I approve of the poultice or the pads of cotton to envelop the chest? No. Two years ago, after my criticism of Dr. Wells' paper was published, an aged physician regretted that I had not spoken of the value of "the blister" over the affected part. The subject before me was only that of "Blood-letting; Its Value or Danger." It is the same now, but I may add here that the application of cloths dipped in ice-water is to the patient the most agreeable application I have ever used.

Despite the great length of this paper I beg of you to hear the utterances of one of our most eminent men to his students at his clinic in the University Hospital, and published in the February number of the *International Medical Magazine,* pp. 43, 45. Dr. William Pepper stated to his pupils at the clinic, that "the man of twenty-eight years had been well until ten weeks before his admission to the ward, and had during that time been treated by several physicians. On admission, November 5, his distress was extreme; he was unable to lie down or recline, and was obliged to remain constantly in a sitting position, but did not get relief from leaning forward." Then follows a long and interesting account of the illness and treatment; after which follows: "On November 7, the third day of his stay at the hospital, the symptoms were so alarming, with deep cyanosis, labored action of the heart, orthopnœa, and high fever, that I had him bled from the arm to the extent of twenty ounces. The good effect of this was immediate, and although cyanotic symptoms returned to some extent on the following day, a material improvement dated from the time of the venesection." Again the learned professor at great length gives his views of the case, and before closing his paper remarks, January 5: "He has continued to do well, and is now thoroughly convalescent. Before closing, I would call your attention to the extraordinary effect which followed the abstraction of blood. All of us who saw his condition before the bleeding, and watched the immediate effect of this, were satisfied that his life were saved thereby. I doubt if any other remedy could have acted so promptly and efficiently. It was the observation of such striking results, when bleeding was used in suitable cases, that gradually led our medical forefathers to rely upon it more and more in grave crises, until its occasional and legitimate use degenerated into almost promiscuous abuse. It is one of the tasks set before clinical medicine to-day to indicate with the greater precision, rendered possible by our improved methods of investigation and more full knowledge of the natural history of disease, the exact conditions under which this most powerful remedial measure is to be adopted."

Such are the recent utterances of the able editor of *A System of Medicine by American Authors,* in which is a paper by Alfred Loomis, M.D., Professor of Practice in the University of New York, who believes "pneumonia a constitutional disease, with a local manifestation," and regards blood-letting as a dangerous plan of treatment. Such, too, has been the views taught to large classes of students by Prof. Pepper until he made trial of the remedy. I sincerely hope that Prof. Loomis, too, will make a trial of it hereafter, and be induced, like Dr. Pepper, "to doubt that any other remedy could have acted so promptly and efficiently."

I cannot be too grateful to Prof. Pepper for his valuable testimony in relation to venesection, and for the hope which he has given us, that hereafter he will not withhold this potential means of relief from those suffering in the grasp of this (now) too fatal affection. It is one of the most remedial diseases when properly treated; but when managed by arterial sedatives and their aids, stimulants and excess of food, a most fatal one. More than sixty-five years of careful, anxious observation of the effects of blood-letting in pneumonia have proved to me that it has no rival as a remedy for that disease.

Discussion.

Dr. William Pepper: I think great praise is due to Dr. Corson for the faithful and able manner in which he has kept before the profession the importance of blood-letting in certain conditions of disease, and especially in pneumonia. While not prepared to admit its necessity as a remedy in all cases, I must state that I find myself confronted—not rarely—with a group of symptoms indicating oppression of the heart, and approaching cyanosis, which yield to prompt and moderate venesection as to no other remedy. So that with continued caution, but, on the whole, with increasing frequency and confidence, I find myself resorting to it.

Dr. James C. Wilson: We must all regret the absence of Dr. Corson to-night; we shall certainly in the discussion miss his firm convictions, his ready retort, his wit, and the results of his ripe experience in this matter, which for so long a time has been so near his heart. It is certainly most interesting to hear this paper, a continuance of a series of papers in which this determined, clear-headed man at the age of ninety years continues to uphold his position in regard to the treatment of pneumonia. In listening to the paper it has been impressed upon me that I am in neither of the camps referred to by Dr. Corson. I must indorse what has been said by Dr. Pepper in regard to venesection. We all recognize the occasional necessity for venesection in the early stages of croupous pneumonia. It often gives relief from urgent dyspnœa and pain, and sometimes even appears to save life. It cannot, however, be regarded as a specific treatment. It must be considered as symptomatic. I do not find myself in the camp of those who are prepared to adopt venesection as a routine treatment in pneumonia. On the contrary, I feel that my experience is opposed to this or any routine treatment.

I find myself equally out of place among those who rely upon the group of remedies known as arterial sedatives. I read from a paper [1] which embodies some views that I have expressed in regard to the treatment of pneumonia.

The paper speaks of various methods that have from time to time been largely employed and have gradually fallen out of use.

"In the same manner we condemn the treatment by tartar emetic in large doses, and with it is relegated to the limbo of discarded medicaments in pneumonia Trousseau's lauded *kermès*. The treatment by large doses of veratrum viride in the early stages, which still survives and finds in many quarters earnest advocates, is based upon the same antiphlogistic idea and has little to commend it. To add the depressing effect of a powerful drug to the pathological influences already depressing the heart is now recognized as increasing the danger of cardiac failure. In fact, if, as our knowledge of croupous pneumonia indicates, many of the symptoms are due to a toxæmia, it were better to bleed the patient, if he is to be bled at all, into a basin than into his own vessels. To depress the heart by veratrum viride or aconite in the first stage, and to harass it by digitalis at a later period are among the vagaries of a therapeutics which takes pleasure in vaunting itself as rational. To give cardiac depressants in croupous pneumonia is always of doubtful expediency, and digitalis as a cardiac stimulant should be administered only in response to special indications. Of the latter drug Brunton says, 'It is of little use in pneumonia.'"

The difficulty of determining the value of treatment in pneumonia, it appears to me, lies in our inability to estimate the part played by treatment in the ultimate results in a large collection of cases.

"Croupous pneumonia occurs with great frequency in connection with other diseases. It is not uncommon during convalescence from acute infectious processes. Those who suffer from chronic Bright's disease and from valvular and degenerative diseases of the heart and from organic diseases of the nervous system are especially prone to it. It not unfrequently occurs as the terminal condition in these affections and in other constitutional diseases, such as diabetes mellitus and pulmonary phthisis. Under these circumstances, it preserves, however, its own clinical and anatomical characters, and must be regarded, not as a mere complication of preëxisting pathological processes, to which it has no essential causal relation, but as an entirely independent intercurrent disease.

"When we consider the modifications of pneumonia under these circumstances and in the different periods of life from childhood to old age, and in alcoholic subjects, we are impressed with the uselessness of attempts to show by statistics the value of different plans of treating the disease. No general percentages of mortality can be relied upon as indicating the efficacy of a treatment unless they are on a large scale and in connection with a critical analysis of the condition of the patients. It is a question of the seed, which is probably always the same, and the soil, which is definitely modified. The only reliable test of the value of treatment is its effect upon the general course of the disease, a test which is much influenced by the personal equation of the observer. For this reason plans of treatment once in vogue, credited with surprising results in reducing the mortality of the disease, have failed to stand the test of time and have passed into disuse. And while the profession unites in striving after some specific treatment for other infectious diseases, the present drift of opinion in regard to croupous pneumonia seems by common consent to be in the direction of a vigilant expectancy with active treatment of symptoms as they arise.

"Whether we regard acute lobar pneumonia as a specific inflammation, or, in the language of the day, as an acute infectious febrile disease, of which the pulmonary lesions are merely a localization, we recognize in its causation three factors—a pathogenic bacterium, a predisposition, and an exciting cause—in other words, the seed, the soil, and the implantation. Nothing in the process is more obvious than its specific nature.

"Pneumonia cannot be regarded as a simple inflammation. This being the case, the antiphlogistic treatment of former times scarcely deserves discussion. Indiscriminate blood-letting as a routine treatment for a specific pathological process, the natural history of which shows it to be self-limited and of comparatively short duration, is not in accordance with modern therapeutic principles. Still less are repeated venesections and bleeding *ad deliquium*."

It seems to me that we are fighting over the old battles that were fought almost a century ago in regard to the antiphlogistic treatment of fevers. No one now regards typhus or enteric fevers as inflammatory diseases. No one regards scarlet fever as an inflammatory disease, yet we know that toward the close of the last century and in the early part of the present century, when fevers were considered to be varieties of *the* fever, fever was considered to be a manifestation of inflammation, and not only was its treatment by venesection discussed, but it was pretty generally practiced. Almost all physicians of a generation later than that of our distinguished friend have come to regard pneumonia as a specific infectious process. Nobody now holds that a specific disease should be treated by venesection. We have here to deal with a self-limited disease, a disease of short duration, and a disease which, in the majority of cases, tends toward recovery. To bleed as a routine measure is to add, in a large number of the cases that come under our care, the ill-borne effects of depletion to the debilitating influence of a specific inflammation attended with a depressing toxæmia. Therefore, it seems to me that it is scarcely worth while to oppose a plan of treatment based upon a conception of the pathology of the progress which is no longer tenable.

To bleed, however, for the relief of the dyspnœa, to bleed for the relief of the over-distended right heart, is not only clearly a duty in certain cases, but I believe that it is a duty which is often omitted to the disaster of the patient. I myself have had unfortunate results in the cases of pneumonia that I have bled. I have bled but few cases—they probably do not number more than four—and every case that I have bled I have lost. I have bled freely and without hesitation.

In the treatment of pneumonia we must pursue a plan of vigilant expectancy. I am opposed to the use of large doses of digitalis in the later stages, during the period spoken of as that of red hepatization, after the exudate has undergone coagulation and has established in one lobe or in the whole lung a marked obstacle to the circulation. It seems to me that the use of digitalis under these circumstances throws work upon the heart which is unnecessary, and tends further to harass it. In regard to the expectant treatment, the whole history of the disease, viewed from the standpoint of its specific nature, seems fully to justify in the present state of our knowledge an armed expectancy; a method of treatment in which, on the one hand, stimulation is not practiced; and, on the other hand, *depletion is avoided, in which there* is relief of the symptoms with a use of proper hygienic measures, and the disease is allowed to run its course just as we feel obliged to allow the other specific self-limited infectious diseases to run their course.

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[1] The Medical News, December 20, 1890.

Dr. J. M. Anders: In the first place I think that Dr. Hiram Corson is to be congratulated heartily upon the uniformly *good results obtained from free bleedings*, and, *in the second* place, he is especially to be admired for his courage in bleeding during these long years, indiscriminately, and without hesitation. Fow there are a great many men, it is true, who are not in the same camp with Dr. Hiram Corson. The speaker who preceded me stated that he was not in favor of indiscriminate bleeding, and that he bled simply for subsidiary reasons and purposes. In that opinion I heartily concur. But, gentlemen, the results of bleeding, as practiced by Dr. Hiram Corson, are certainly unparalleled for excellence; and, hence, it will not do to say that his cases got well in spite of the treatment, on the one hand, nor to say that these cases would have gotten well without treatment, on the other hand. It, therefore, seems to me that we are *put to the task of finding an explanation* for the good results of repeated large bleedings in the hands of Dr. Hiram Corson.

I have myself bled but very few patients with pneumonia. About ten years ago I promised Dr. Hiram Corson that I would bleed my pneumonia patients, which promise I have kept only in part. Soon after that I met with a case of *sthenic type in a male about 40 years of age, with full,* bounding pulse, flushed face, high arterial tension and marked nervous excitement. I withdrew about 20 ozs. of blood. This seemed to quiet the heart, diminish arterial tension and allay the nervous excitement, and the patient made a rapid and good convalescence. Some time afterward I met with another case in which I tried bleeding, but with a fatal termination. This case was not one of purely sthenic type, nor was it one, strictly speaking, of asthenic type. It seemed to occupy the middle place. I withdrew about twenty ounces of blood, and did not repeat the bleeding. Now, according to the remarks of Dr. Corson, I probably bled timidly. I saw a third case in which blood-letting was performed, in the wards of the Episcopal Hospital. This case was in the hands of a colleague, and I agreed with him that bleeding might be of some service, although the patient was practically moribund when the procedure was resorted to and it reached a fatal termination in a short time. The case was one of sthenic type, with more or less congestion around the seat of consolidation, which evidently had been followed by œdema.

The chief reason—at least so it seems to me—why Dr. Hiram Corson's results have been so regularly favorable, is the fact that patients living in the country and suffering with pneumonia, generally present the sthenic type of the disease; while, on the other hand, cases occurring in large cities like Philadelphia, very generally do not present the sthenic type, but rather the asthenic adynamic type. When a patient of the sthenic type presents himself, it seems to be far better to bleed than to give arterial sedatives—better than to give veratrum viride or tincture of aconite. The bleeding will most certainly quiet the heart's action, lower arterial tension and allay more or less the nervous excitement, and will remove a portion of the burden from the heart without robbing it of much, if any, of its power. It is true that veratrum viride and aconite will also relax the blood-vessel walls, will also quiet the heart, but all of the indications fulfilled by these drugs, and I say it without hesitation, do so at the expense of heart power. The same *is not true of blood-letting*—at least, not to the same degree. Veratrum viride and tincture of aconite, while relaxing the vessel walls, also act as cardiac depressants.

I gather in the next place, that Dr. Hiram Corson has had good results from blood-letting in the second stage of the disease. It is hard to understand how bleeding at this stage can be of benefit, unless, as Dr. Wilson has explained, under certain circumstances, we thereby relieve an over-distended and dilated right heart. On, the other hand, it is to be remembered that in the second stage of pneumonia, as in the first, the fibrin factors of the blood are three- or four-fold what they are normally. Hence, under these circumstances, large bleedings, by diminishing this tendency, will lessen the liability to the formation of cardiac thrombi; and to my mind, cardiac thrombi are frequently the chief cause of a fatal termination. At all events, thrombi are followed by dilated right heart, venous stasis and death.

I do not believe that blood-letting exerts any good local effect in the second stage. The only way in which bleeding can affect favorably the lung is when we have such complications as congestion around the seat of consolidation, followed by œdema. Bleeding then acts according to ordinary hydraulic principles, and only in this way.

The method pursued by myself in the treatment of pneumonia is very briefly as follows, and in stating the method which I have pursued for a number of years, I shall perhaps bring out a few points bearing upon the paper of the evening. During the first stage of pneumonia, as I have said, I have bled a couple of times. My usual method, however, is to give morphine hypodermically, as recommended by Dr. Alfred Loomis, of New York. Perhaps the chief reason that I have not bled is because I have not met with a purely sthenic type of the disease. During the past winter I, however, saw two cases that apparently belonged to this type, but as they both followed la grippe, I was timid and did not bleed. Since they have died, I have regretted that I did not bleed them. I give morphine in doses of one-sixth to one-quarter of a grain, repeated every eight or twelve hours. Morphine fulfils several indications fulfilled by blood-letting: it quiets the heart's action, it relieves pain, it guards the heart, and at the same time gives rest and comfort to the patient. In addition to morphine, or if it does not suffice to allay arterial tension, I use local blood-letting, applying several leeches and withdrawing 6 to 8 ozs. of blood, and repeating this if necessary. If leeches be not convenient, I sometimes resort to wet cups, withdrawing about the same amount of blood. It is hard to explain the effect of local blood-letting on physiological grounds, yet of the efficacy of this method I am thoroughly convinced. It does diminish arterial tension and nervous excitement, and gives relief from pain.

In the second stage of pneumonia the indications, so far as the local trouble is concerned, are, it seems to me, the reverse of what they are in the first stage. In the first stage the blood-vessels are dilated, but in the second stage the blood-vessels are, as a rule, compressed. Their lumen is diminished. The obstruction to the pulmonary circulation is greater than in the first stage. In the second stage the indications are for the use of stimulants, but alcoholic stimulants should be supplemented by the administration of strychnine. Strychnine certainly fulfils certain indications not met by alcohol. Especially should we note its effect on the vaso-motor and respiratory centres. If strychnine and alcohol fail to relieve the heart, then I resort to digitalis. I do believe that digitalis increases the capacity of the heart for work. Since it slows the heart's beat, it also allows time for the heart to carry on its nutritive functions. When the digitalis fails to whip up sufficiently the flagging heart and venous stasis goes on increasing, then I administer oxygen by inhalation. During the last stage I use the stimulating expectorants, and where resolution is delayed, nothing is better than turpentine.

I shall not take up the time any longer, but I wish to say, in conclusion, that the Society is indebted to Dr. Hiram Corson for having produced this paper, and for calling renewed attention to a measure which has been too much neglected in recent years.

Dr. H. C. Wood: I should not speak to-night, did I not think that there was great danger that, in the lack of clear thinking, we were perhaps losing lives. I do not propose to do more than to make a few comments upon what has been said by my friends Dr. Wilson and Dr. Anders. I am always afraid of rhetoric in a scientific discussion. When I hear of such things as a heart being "harassed" by digitalis, and similar expressions, I always begin to fear that the science is in inverse proportion to the rhetoric. Now, how can digitalis harass the heart? Much more, how can it exhaust the heart? You might as well talk of exhausting a starving man by a dish of broth, as talk of exhausting a heart by giving digitalis. Digitalis adds power to the heart. That is an absolutely proven physiological fact. It lessens the nervous irritation of the heart, and at the same time increases the length of the diastole, and the force of the systole; far from harassing the heart with digitalis, you quiet the heart that is already harassed by disease.

Then again, we have heard that the heart is laboring with an obstruction, and therefore we must not give digitalis. That is the very reason why we must give digitalis. You have one-fourth of a pair of lungs obliterated—that means that one-fourth of the lumen of the vessels is shut off, so that the heart must force the normal amount of blood through three-fourths of the normal space. Of course, under such circumstances, the vessels and the right side of the heart must be oppressed. The heart is weakened by starvation and disease, and it finds itself in the presence of narrowed channels. Digitalis aids us in advanced pneumonia, because there is obstruction and because the right side of the heart feels the power of the drug. We know by clinical experience the value of digitalis. Statistics are fallacious, but there is a kind of test that is not fallacious. If you take a man dying with a feeble, thready pulse, scarcely alive, and raise him up with digitalis and get the long, strong pulse, and then take away the digitalis and see him drop; give the digitalis again and lift him up again, then let him drop again, and lift him up again, you have proof that the digitalis does control the circulation. You know that it does do good. Moreover, in advanced pneumonia, when properly used, digitalis has no power for evil. The real difficulty in its use in pneumonia is that somehow the high temperature interferes with its action. When there is high temperature in pneumonia, the heart muscle often will not respond to digitalis.

Now a word to my friend Dr. Anders. He spoke in regard to blood-letting and arterial sedatives, and said that you take the power out of the heart by arterial sedatives, but that you did not take the power out of the heart by blood-letting. Let us make an experiment: give a man daily doses of veratrum viride and keep the pulse down for twenty days, and then take a man and remove 20 ozs. of blood each day for twenty days—which heart would come up the strongest at the end of this time? It is essential, in the practice of medicine, to distinguish between depression and exhaustion. Blood-letting exhausts a man—it takes power out of a man. It leaves the man something less than before. Does veratrum viride take any power out of a man? It lays its hand upon the heart and vaso-motor centres, and binds them down with strong thongs. The man is there, and when the thongs are cut—*i. e.*, the depressant removed—he rises up as strong as ever.

Dr. C. McClelland: I should like to say one word from my personal experience. Something over two years ago I had an attack of pneumonia; both lungs were involved; the heart was depressed, dropping every third beat, and valvular murmurs were present. The mind was clear. I said to the physician in attendance: "This kind of thing cannot last more than twelve hours. Can nothing be done? How about digitalis?" He agreed to try digitalis. It was used vigorously, and in such large doses that one of my attendants remained all night to watch the effect. Inside of eight hours the beat of the pulse was strong, the intermissions had practically ceased, and the valvular murmurs had disappeared. I believe that had it not been for digitalis I should not be here to tell the story.

Dr. Judson Daland: I have been quite interested in the treatment referred to, but I think that the ordinary cases of pneumonia—as we all see them in the majority of uncomplicated cases—may go on to a satisfactory result. I have been much impressed with the fact during the last two years. In the first place, as has been said by Dr. Anders, when death occurs it is usually directed through the right heart. We have an increase in the amount of blood in the venous system and over-distension of all the veins and dilatation of the right heart, with death following from failure of the right heart. Four autopsies made during the past year showed this condition very exclusively. It seems to me very certain that if we abstract blood directly from the median basilic vein we directly drain the blood from the right heart and lessen venous stasis and take off the labor from the right heart and prevent death from heart failure. This, I take it, is an important indication for blood-letting.

Furthermore, as has already been said, heart clot is unquestionably accountable for many deaths. It has often been said that in pneumonia the blood had an increased tendency to coagulate. This fact has not been appreciated with sufficient clearness. About eight months ago I had occasion to examine the blood of several cases of pneumonia, and at the same time was examining blood from other diseases, chiefly diseases without fever, and I was strongly impressed by the fact that in every case of pneumonia, when I attempted to examine the blood it would coagulate in the capillary pipette with great rapidity, and it required special manipulation in order to make the examination. It seems to me that if the right heart and venous system is over-filled, a condition favoring the condition for this coagulation, I think that physical signs of dilatation of the right heart should be searched for, and that we should not wait until cyanosis develops. In two cases of pneumonia where the right side of the heart was dilated and the veins overfull, the physician insisted upon waiting for cyanosis. Cyanosis did develop, and at the same moment death occurred. I think that if the physical signs can be made out, and with it are associated symptoms, venesection should be promptly performed.

Dr. S. Solis-Cohen: I rise to call the attention of the Society to the usefulness of the nitrites in the treatment of pneumonia. Some of the remarks in discussion, especially those of Dr. Wood, might at once have suggested to those familiar with the physiological properties of the nitrites the great power that this class of drugs can and does have in the treatment of diseases like pneumonia. I am not speaking of the management of conditions directly dependent upon the specific poison of the disease, if there be such a specific poison, but of what may be done to relieve the embarrassment of the circulation from mechanical stasis due to obstruction in the lungs. Dr. Wood laid stress upon the fact that a large portion of the arterial conduit was wiped out, or better, blocked out. It seems to me an obvious inference that it would be highly desirable to increase the capacity of the remaining portion. Looking on the arterial and venous channels, pulmonic and systemic, as one continuous canal, it is theoretically clear that we must especially dilate the arterial portion in order that the whole volume of the blood may not accumulate on the venous side; and in order likewise to facilitate the passage of the blood through branches of the main canal collateral to those obstructed. The nitrites—nitro-glycerin, amyl nitrite, sodium nitrite—will dilate the peripheral arterioles, and will dilate the capillaries, increasing the capacity for blood of the arterial side of the circulation, and thus partially compensate for that portion of the arterial channel dammed out by the blocking of the vessels in the lungs. Pulmonic vessels are dilated as well as systemic, and thus the right heart is directly relieved of labor, and the danger of over-distention in large degree diminished. Respiration is likewise relieved, especially if oxygen be given by inhalation coincidently. I have seen this remarkably illustrated, not once or twice, but more than a dozen times within the last two years since my attention has been more particularly directed to the subject. This measure alone will not, of course, succeed in bringing about recovery in every case of pneumonia. There are other additional ends to be aimed at by the physician, and I had been hoping to hear attention called to one of them. The increased tendency of the blood to coagulation in cases of pneumonia was dwelt upon, but the value of ammonium salts in maintaining the fluidity of the blood was not spoken of. This subject is not at all new. It was long ago brought to the attention of the profession by the same great man that introduced the nitrites, Dr. Benjamin Ward Richardson, of London. Others had, perhaps, used ammonium carbonate and ammonium chloride before him, but he it was who laid especial stress upon the danger threatening pneumonitic patients, of death from heart-clot, and for that reason urged the early and free use of preparations of ammonia to prevent heart-clot by maintaining the fluidity of the blood. He also called attention to a useful method of administering ammonia in septic conditions associated with fibrinous exudations, namely, by giving the vapor of ammoniated chloroform.

I should like to add one word in regard to the rationale of blood-letting in selected cases of pneumonia. I have seen blood-letting do good by relieving the right heart of distention, and by diminishing the quantity of blood which the enfeebled heart has to push through the much diminished calibre of the vascular channel. There are two ways of taking a portion of its labor from the heart; one is to dilate the arterioles, thus increasing the vascular capacity and diminishing the vascular resistance—the agent used for this purpose being a nitrite—and the second is to diminish the quantity of blood which the heart is called upon to propel and the vessels to conduct. It has been said that the loss of twenty ounces of blood is a serious matter to the enfeebled patient. That depends on where the blood is, what its condition is, what it is doing. A portion of the patient is thrown out of functional relation, and a normal quantity of blood becomes relative plethora. It is of no good to the patient while it stagnates in his veins. It does not nourish him, and it does interfere with the passage of nutrient fluid into the tissues. He is a great deal better off without these twenty ounces if he is unable to make use of them, if they contain toxic products, if they are simply blocking the lungs and veins, and finally blocking the arteries. They antagonize the heart—first the right heart, then both sides; they do no good; they are not, to use Dr. Wood's comparison, liquid food to nourish; *they are liquid poison to kill*, and the sooner the patient gets rid of them the better his chances for recovery.

Dr. A. E. Roussel: In connection with the use of digitalis it may be interesting to note the results obtained by Professor Pétresco, reported in a recent number of the *Bulletin de Thérapeutique*. He gives an analysis of over seven hundred and fifty cases in which he used large doses of digitalis—as high as two drachms of the leaves in twenty-four hours—irrespective of the stage of the malady. The mortality was a trifle over one per cent. He claims that the pulse-beats are reduced from 120 or 130 to 28 or 30 per minute, and the temperature also seems to be favorably affected, falling four or five degrees, besides which it is said that the entire course of the disease is jugulated in so short a time as three or four days. The publication of such a large series seems to require a careful study of the matter. We have all been in the habit of giving digitalis in the second and third stages of pneumonia, and this report would bear out the statement that digitalis and carbonate of ammonia are eminently satisfactory modes of treatment.

Dr. Ernest Laplace: I have been very much interested in the discussion, and was hoping that a few more words would be *said on the etiology of the disease, so as to give some* explanation as to the reason why there are sometimes sthenic cases and at other times asthenic cases, and therefore, why blood-letting would be in certain cases and not in others. We know, as was said by the first speaker, that pneumonia is a specific disease, that it needs a special soil, and a special seed developing in it. We know that the same seed, developing in a different soil, will produce a disease, but that disease is not necessarily the same in every respect. In the same way we plant a seed in different countries, and it will not produce exactly the same tree in each case. There are many different soils as there are patients suffering from the disease. As a result of the growth of the peculiar organism we have produced a toxalbumin, or, if you will, ptomaine, which in the patient acts as a heart stimulant, and we have a sthenic case. In such a case gentle blood-letting will relieve the heart of the extra amount of work. It will not cure the disease, and has no tendency to alter it, but makes it less grave than when the blood has not been removed. Where the toxalbumin is not so violent, or is not so abundant, or is of a different physiological action, the heart not being over-stimulated, the disease weakens the patient and blood-letting is not indicated. In such a case calm expectancy, with readiness to meet the symptoms as they present themselves, is the proper plan of treatment.

Dr. Frank Woodbury: I have been much interested in the discussion, but, of course, was particularly attracted, as doubtless many others were, by the paper of Dr. Hiram Corson. The experience of a physician extending over a period of sixty-five years is certainly one that we should receive with great respect, and especially when he possesses the recognized ability as a practitioner, such as that possessed by the author of the paper under discussion. While listening to the paper and the discussion, the celebrated advice of Chomel came into my mind, "to treat the patient and not the disease." We have been considering some of the dangers attending a case of pneumonia. The greatest danger to which the pneumonic patient is exposed, in my judgment, is to have a man for his physician who is so engrossed with treating the mental abstraction which he calls pneumonia that he cannot see the concrete needs of the actual individual patient who claims his care. I entirely agree with the last speaker with regard to the desirability of confining ourselves to the use of scientific language in a discussion of scientific questions, and the dangers to which we are liable from the abuse of rhetoric when referring to medical subjects. I wish to use only words of truth and soberness, and, therefore, will not speak of the heart "putting its shoulder to the wheel" under the influence of a remedy, nor as "harassed" either by a drug or a disease. Being rather deficient in poetic insight or the imaginative faculty, I will even confess that I could never see any "indication" for remedies. The word "indication" is not in my therapeutic vocabulary. Nature never "indicates" to me a drug or a combination of drugs in any morbid state. Experience has shown that patients may be benefited by certain remedies when judiciously administered, *but we are not restricted to* such drugs, and we are willing to abandon them as soon as others shall be discovered which will cure more "safely, quickly, and agreeably." This we could not do if Nature infallibly indicated remedies. The late Dr. J. Milner Fothergill called attention to the robust countrymen at Smithfield, and compared him with the pallid clerks and artisans thronging the London streets, and very justly pointed the moral that the line of treatment in these two classes in case of disease must be entirely different. Perhaps this will explain the success of Dr. Corson in a rural community, with his practice of depletion in pneumonia, a practice which our city physicians have been obliged universally to abandon. In spite of the advocacy of the great Dr. Rush and his successors, it has almost become obsolete with us. I think that perhaps we have done as much as we should do for the present in regard to the classification of disease, and that we should now begin to classify our patients as to the foundation of success in therapeutics. For instance, instead of dividing pneumonia into sthenic and asthenic cases, I think that it would greatly simplify the problem of treatment if we were to substitute the words plethoric and anæmic. It is easy to make a distinction between plethoric and anæmic patients. Sthenic cases are more likely to occur among the plethoric; asthenic cases among the anæmic. In plethoric cases, or even where the hyperæmia is local, blood-letting is a rational procedure, and when the symptoms are urgent, and do not admit of delay, it is practiced with advantage, as Dr. Corson has shown. We should not, however, bleed for *the pneumonia; as has been already said, we should bleed* for mechanical reasons. Where the symptoms are less urgent, we may decide to depend upon arterial sedatives and dieting to accomplish the same purpose. In regard to a typical case of pneumonia, by which I mean an ordinary acute lobar or croupous pneumonia, I might say that I do not recognize congestion as the first stage in the morbid process. Even the premonitory hyperæmia of Stokes must have something to precede it. It is certainly permissible to assume a nervous disturbance which causes the local hyperæmia; in other words, some efficient morbid influence acting through the vasomotor nerves of the affected lung and the cardiac ganglia, and causing trophic disturbances. The view is now generally held that pneumonia is not an inflammation, but a general disease, if not a "specific fever."

In a plethoric case, or robust patient, I should commence the treatment by that old-fashioned remedy, an emetic, and preferably ipecacuanha, because it is a fact that this emetic tends to produce anæmia of the lung. There is no better arterial sedative than an emetic, and this also quickens the functions of the skin and favors diaphoresis. This I would follow by magnesia sulphate in sufficient doses to produce several watery evacuations of the bowels. In this way, we relieve the over-distention of the blood vessels. We do not bleed the patient into his own tissues, but into his own bowels. Then I should simply give remedies to make the patient comfortable, and keep him upon a very restricted diet. If there is great restlessness, or too much cough, I would give small doses of chloral or bromide in preference to morphine. I remember a case where a patient was doing well under small doses of chloral and bromide. I was attending him during the absence from the city of another practitioner, who, on returning, took charge of the case and changed the treatment to Dover's powder, with the result that in the course of a couple of days the patient died. I think that many deaths in pneumonia are really due to opiates, and, in the beginning, they are inadmissible, just as in the early stages of bronchitis.

An anæmic case of pneumonia I should treat entirely differently. Here I should give restoratives and broths, and depend upon nursing more than upon medicines. I would give digitalis and quinine, and perhaps iron, but in such cases supporting the strength of the patient is far more important than any special drug, and bleeding is not to be considered.

As we know that a large majority of the cases of pneumonia get well under any and every form of treatment, we are tempted to echo the advice of Chambers with regard to rheumatism, to "cover up the patient with blankets and leave alone," which, in fact, is about what Jürgensen advises in pneumonia. Unless we have certain symptoms that give annoyance, pain, or suffering, I think that the vigilant expectant treatment advocated by Dr. J. C. Wilson in opening this discussion, not too actively interfering with the course of the disease, will give the best results in the greatest number of cases. When the emergency arises and the patient is suffering from acute plethora, or distention of the *right heart, or overwhelming congestion of the lung, I should* bleed just as if the patient did not have the pneumonia, but I would never bleed for pneumonia. The routine practice of venesection in this disease has never recovered from the death-blow it received at the hands of J. Hughes Bennett. At the same time, I can understand that the emergency may sometimes arise when the abstraction of a certain amount of blood will afford great immediate relief to the patient, without being followed by any serious consequences as regards the subsequent course of the disease.

Dr. John B. Roberts: It may seem presumptuous for me, who see comparatively few medical cases, to speak on this subject. I have, however, bled in a few cases of pneumonia. I now recall four cases, of which three recovered and one died. It is, however, not fair to the Society nor to statistics to quote these cases together. They are divided into two distinct classes. The first class contains cases of traumatic pneumonia, which I see in surgical practice. They are usually of the sthenic character, and in them at times the engorgement of the lungs, from acute traumatic pneumonia, demands depletion. The second class of cases in which I am inclined to bleed are cases similar to those spoken of by Dr. Anders, in which, in addition to a pneumonia, there is overwhelming of both lungs with what might be called œdema of the lungs. These are cases in which the presence of moist râles indicate that the smaller bronchial tubes, and possibly the vesicles where they are not filled with the croupous deposit, are filled with mucous or serous fluid, thus preventing respiration. The patient is cyanosed, gasping for breath, and *in articulo mortis*. These cases should be bled. I have bled two of them and one has recovered. The other two cases of my four already mentioned, were instances of traumatic pneumonia in which I think that there is no question that a moderate bleeding of from eight to ten ounces or less (I have never removed many ounces) was of service. One was a case of gunshot wound of the lung followed in about twenty-four hours with violent dyspnœa, orthopnœa, and all the symptoms of acute pneumonia. I at once bled and he was relieved; the symptoms disappeared and he rapidly recovered, notwithstanding the fact that he had a bullet in the chest. The second case was that of a man who had been run over by a wagon, had several ribs broken, a pneumonia following from punctured wound of the lungs by the ribs. He was bled with a satisfactory result. Of course, we must separate these cases into groups—those of traumatic sthenic pneumonia, and those in which there is overwhelming of the lung and the patient threatened with drowning in his own secretions. In the latter case the abstraction of blood gives the lungs an opportunity to be relieved, lessens the engorgement of the right heart, and permits respiration to be properly carried on.

Dr. George N. Highley: I have listened with a great deal of pleasure to the remarks that have been made, and I feel thankful for the favorable comments which this paper has elicited. With regard to pneumonia being a general disease, we differ from the many eminent men who hold that view. We do not think that this has been proven. Because it is accompanied by certain constitutional disturbances, is no reason for regarding it as a specific disease. We know that local troubles when similarly situated pursue like courses, and when extensive are accompanied by constitutional symptoms in proportion to their extent and gravity But whether we regard pneumonia as a local disease or as a local manifestation of a general disease, we must agree that the condition present demands relief by measures which will unload the lung and the right side of the heart, and we think that venesection does this with the greatest amount of relief and the least amount of depression. A word in regard to bleeding in the so-called asthenic cases. Out in Conshohocken we do not see such cases. We regard the condition as precisely the same in all our patients, whether robust or weak, or run down by disease. I know of one case, a woman with an ovarian tumor weighing sixty pounds, for which she had been refused operation. She was taken with pneumonia and her physician attended her for a few days; the disease had progressed to the second, and perhaps to the beginning of the third stage. Dr. Corson was called in consultation and advised venesection, which her attending physician had hesitated to perform on account of her great weakness. Twelve ounces of blood were removed with relief of the symptoms, and from that time she did not expectorate any more of the rusty colored sputa. That was a remarkable case and I could give the full notes if there were time. I refer you also to the case of Dr. Michener (*Med. and Surg. Rep.*, July, 1882), who, at the advanced age of eighty-seven years, and while suffering from a fracture of the arm, was attacked with pneumonia. He directed the attending doctor to "bleed until the pulse gives way and the respirations become easy without regard to what may be in the basin." This was done, and relief soon followed. The amount taken was ℥xv.

About bleeding in the third stage. Dr. Corson's idea is that there is always some stage of congestion in part of the lung. If you could conclusively show that the area first affected did not extend with each succeeding day, and that the parts involved simply went through the several stages without further extension, then it would be true that venesection would be harmful after the first or second stage. We think, however, that in every case and in every stage of the disease, until the crisis has been passed, new portions of the lungs are continually being involved, and for these new areas of congestion and inflammation blood-letting is of value.

Georgia State Medical Association.

Forty-third Annual Meeting, held at Columbus, April 20, 21 and 22, 1892.

First Day—Morning Session.

The Association convened in Springer's Opera House; and was called to order at 11:25 A.M. by the President, Dr. G. W. Mulligan, of Washington.

THE ADDRESS OF WELCOME

was delivered by the Hon. J. B. Slade, Mayor of Columbus, which was responded to by Dr. J. B. Baird, of Atlanta.

Prayer was then offered by the Rev. Robert Harris.

President Mulligan delivered his

ANNUAL ADDRESS,

in which he pleaded for the abandonment of all unscientific methods of reasoning and investigation, and for a still firmer alliance with those principles which, in other branches of knowledge, have produced such brilliant results. He pleaded for less reliance on the blind gropings of empiricism, and a still closer affiliation with every method of modern science. He also pleaded for the exclusion of all fallacies, and the adoption of every safeguard which may indicate a wrong direction in our studies, and for the entire displacement of self in the investigation of life both in health and disease, and a concentration of all our powers in searching out and fortifying the laws governing the relation and succession of these phenomena.

Dr. J. M. Spence, of Waresboro, read a short paper entitled

A CASE OF OVARIAN CYST.

May 1, 1890, he was called in consultation with Dr. W. P. Williams, of Waycross, to see a case. Five years prior to his visit the patient gave birth to twins, attended, however, with great difficulty. An undergraduate attended her. Her health was apparently good until she became pregnant again, twelve months hence. The issue of the second pregnancy was triplets, the patient again enduring a state of prolonged labor and excruciating pain, under the supervision of the same quack. In about two months something began to grow in the region of the right ovary. It grew rapidly for about three years. After a careful examination an exploring needle was introduced, which on its withdrawal was found to contain a thick, dark straw-colored fluid, about the consistency of ordinary syrup. The legs and whole lower extremities were infiltrated with water, her tongue coated, and bowels costive, the infiltration being caused by compression of the tumor on the kidneys and ureter. They next took a measurement of the abdomen, which was 6½ feet, and from the pubes to the ensiform appendix the distance was 3 feet and 9 inches. Calomel, pulverized rhei, carbonate of soda in repeated doses, together with iron, strychnine and digitalis, were given for a few days. Six days later they met and introduced a trocar and canula through the walls of the abdomen, and through the aperture thus made there came 70 quarts (which seems almost incredible) of a thick, straw-colored fluid. The same treatment was continued at their second visit, two weeks later, and at this time 28 quarts of a similar fluid were withdrawn, together with something that looked like human brains. At a third visit, two weeks later, they drew 30 quarts of similar fluid, but the trocar would frequently become choked with the brain-looking matter discovered after the operation. Ten days later the patient was seized with cholera morbus and died.

Dr. D. C. Hurt, of Columbus, followed with a paper on

THE INFLUENCE OF CIVILIZATION AND SOCIAL LIFE UPON WOMEN AS VIEWED FROM A MEDICAL STANDPOINT.

He said that while in the present day so much attention is being paid to the diseases peculiar to women, it is highly proper that we, as medical men, should dwell with serious thoughts upon the causes and conditions that bring about these results. It is the office of the physician to assiduously apply himself, 1, to prevent; and 2, to remove, as far as possible, all maladies that human flesh is heir to; but when we open our eyes fully to the conditions of 30 per cent. of our women of the present day, the fact stares us in the face that these evils are wonderfully multiplied.

A practical demonstration exists to-day by comparison of our savage and civilized women in America. While the Indian squaw is unacquainted with female diseases and broken-down constitutions on account thereof, our cultivated and civilized women are growing more and more intolerant of that life which pertains to their special duties as females. The Indian squaw lives in her hut and performs manual duties and undergoes hard physical labor, without any interference with her female nature, and by her the act of parturition is looked upon without dread, carries with it but little pain, and scarcely interrupts her duties from day to day. Our civilized and cultured women, if forsooth they arrive at healthy womanhood and maturity, are liable at each turn of life to become a prey to some one or more of the thousand maladies that eventually bring them under the care of the gynecologist. Why this change? The style of dress which exposes the body to the most inclement weather, producing reversions of cold and heat; the waist being tightly laced by steels, the body being kept in such a state of contortion that deformities result and produce deleterious effects upon parturient women, as well as disturb the functions of the whole organism.

With our present knowledge of antiseptics, we destroy those bacteria which lie broadcast about our homes, and arrest the germ-producing process already at work in the consumption of our bodies; and we should with equal dexterity and confidence in our skill, remove the cesspools of moral corruption, and elevate the mind to higher functions and duties of life-making, avoiding the reversions of sin which pander to depraved appetites, thereby guarding us against those depravities of our nature which tend to foster in us vitiated blood, whose domain it is to contaminate our whole being. We should guard our Commonwealth against the concealed viper discovered only by medical men, which lies ever and anon in our pathway, seeking anxiously every opportunity of injecting its venom into the moral and social veins of human life, thereby leaving in our systems that poison which is to be handed to our posterity as a defiled inheritance.

Adjourned.

FIRST DAY—AFTERNOON SESSION.

The Association reassembled at 3 P.M. The first paper read was by Dr. M. B. HUTCHINS, of Atlanta, entitled

THE RELATION BETWEEN SKIN DISEASES AND THE GENERAL HEALTH.

He dwelt principally upon eczema, because it is the best known and most common skin disease, comprising about one-third of all cases. We find nearly every type of skin disease is one or the other form of eczema; and so what applies in general to eczema applies to all the others. Two things were evident after reading the opinions of the various writers upon skin diseases:

1. We can be positive that all skin diseases are not "blood diseases," or the idea would have been universally accepted.

2. Their disagreement in some details and their general unanimity in other details shows that there is as yet much to be learned concerning the actual etiology of skin diseases.

The germ theory received scant attention in the paper, because the discoveries of skin disease-producing germs are as yet in a most decided condition of infancy, and the discussion of it would lead us farther into the dark than the necessities of the case demand.

THE TREATMENT OF ABORTION AND SOME OF THE COMPLICATIONS INCIDENT THERETO.

Dr. W. A. Crow, of Atlanta, read a paper on this subject. He emphasized the following points:

1. The marked tendency to infection in all cases of abortion.

2. The urgent necessity of removing, as far as possible, all sources of infection, this includes clean hands, clean instruments, cleanliness of person and bedding.

3. The importance of thoroughly satisfying ourselves in all cases of the complete removal of all the fœtal membranes and placental tissue.

4. Keep the patient under observation for at least two months, with the most favorable surroundings in order to complete involution of the enlarged uterus, building up the general health and keeping the bowels open, if necessary, with salines.

5. Be urgent relative to advice in avoiding the possibility of becoming pregnant for at least six months, as sexual connections produce more or less irritation and congestion of the parts and thereby retard, if not in a measure stop, the condition we most desire in these cases—the normal restoration of the parts.

Dr. H. Perdue, of Barnesville, read a paper on

THE TREATMENT OF PNEUMONIA WITH REPORT OF CASES.

Since the first of January, he had had, besides several of the lobular variety, 15 cases of the lobar. Three of the lobar class had one lobe of the lungs affected, four had two, seven had three, and one had four. This shows an unusual *pro rata* number of lobes attacked, yet he had not lost a single case.

In lobar pneumonia, he uses peroxide of hydrogen with good effect. It is given for its germicidal properties, the oxygen it furnished the patients exhilarated and strengthened them. If it nauseates—and sometimes it does—the quantity should be diminished. He feels confident it has saved valuable lives. Throughout the stages of congestion and consolidation he gives phenacetine in five grain doses in connection with whiskey or milk punch every four hours, unless the temperature should get below 103° F. Good nursing is an important factor in the management of pneumonia patients. A nutritious liquid diet, such as sweet milk, beef tea and palatable broths should be given. In convalescence stimulating expectorants and tonics are indicated.

In catarrhal pneumonia, the supporting treatment should be given from the beginning. He generally gives carbonate or muriate of ammonia during the entire treatment. Quinine he considers a valuable remedy in reducing temperature, and as aid to resolution. Mild mustard poultices or blisters to the chest are valuable; also flannel cloths or jackets saturated with turpentine, diluted with oil if the patient is a child. Great care should be exercised in convalescence to prevent a relapse or a second attack.

WHAT IS GYNECOLOGY?

Dr. R. R. Kime, of Atlanta, read this paper. He briefly reviewed the progress made in gynecology, and said the

Father of Medicine recognized the sympathy existing between the mammary gland and the uterus, which he utilized by cupping them for uterine hæmorrhage.

Another twelve centuries brought us to the 19th century in which fads, fashions and cycles held sway as in the olden times. To illustrate: we have only to mention that a few years since everybody slit or divided the cervix; a few years later everybody sewed it up, and now everybody divulses or dilates, and drains.

A few years since everybody probed, or sounded the uterus, applied caustics to ulcers of the os. Now the sound is not often used and ulcers of the os are a nonentity. Within the last three or four decades the advancement in gynecology has been so rapid that it is difficult to keep in the line of march as the procession advances to new thoughts and new discoveries. Ovariotomy is about the only operation that has not been greatly abused or oft-resorted to without just provocation. It first had met with violent opposition, but to-day stands as an established procedure. The improved technique with lessened mortality are about the only improvements since the operation was first performed. The speaker was glad to see gynecology as fast approaching a scientific basis. In the last two decades, it has outstripped all other specialties of medicine in new discoveries and improved operative technique, thereby saving many of "God's noblest gift, the woman perfected."

He concluded by saying that the South had not been asleep, that she furnishes and has furnished her quota of active original workers in this specialty; that the Southern Surgical and Gynecological Association is maintained within her borders, and among her sons may be found such names as McDowell, Sims, Talliferro, and Battey, with many other eminent active workers in that line.

Adjourned.

SECOND DAY—MORNING SESSION.

Dr. A. C. Blain, of Macon, read a paper on

REMITTENT FEVER.

In persons exposed to the malarial miasm, it is a good plan to give daily doses of quinine (5 to 10 grains), each morning, and they should avoid night exposure. Should the practitioner see the patient in the prodromic stage of lassitude, furred tongue, foul breath, he believes that he can often prevent an attack of remittent fever by giving a mercurial cathartic, followed by quinine and a mineral acid.

Actual Treatment.—The patient should be put to bed in a well ventilated room. Patients require good nursing. Regulate diet, a fluid diet is necessary, and milk is the best to rely upon. The practitioner may have to boil the milk and give it iced, or he may peptonize it when necessary. He believes it best to give all nourishment in small quantities and at frequent intervals. In excessive temperature he relies upon phenacetine as the best drug at his command, in doses of from 5 to 10 grains, as the case may demand. The pain the limbs during convalescence can be controlled by phenacetine and salol. Convalescence will be greatly assisted by a tonic of nux vomica combined with nitro-muriatic acid and some one of the bitters.

Dr. W. E. B. Davis, of Rome, read a paper entitled

THE SURGICAL TREATMENT OF PUERPERAL PERITONITIS.

He said that puerperal fever was no longer regarded as a distinct affection, a disease *sui generis*, but is looked upon as a septic fever resulting from infection during the puerperal state. When quarts and gallons of pus are reported as having been removed from the general peritoneal cavity and recovery followed, he believes that the pus has usually resulted from a local collection, which has ruptured into the general cavity, and the operation has been done before sufficient time has elapsed for this amount of pus to result from the septic inflammatory process in the general cavity. It is easy to understand how a gallon of pus, which has been shut off from the general cavity by inflammatory exudations and adhesions, and which has only recently ruptured into the peritoneal cavity, can be removed and recovery follow, and it is not difficult, Dr. Davis thinks, to comprehend how this condition might be mistaken for acute, general suppurative peritonitis with a gallon or quart of pus as a result in the cavity, as the pus by its irritating properties will produce an inflammation which would be misleading; but the condition is quite different from what would be had if the pus had been the result of a general inflammation. Dr. Davis maintains that localized puerperal peritonitis with pus formation is a form of the disease that is amenable to surgical treatment. He had operated on cases where there seemed to be no hope of recovery, with favorable results. He had seen cases, where the pulse was 135, get well after an operation for the relief of this condition.

Frequently the fever from puerperal infection may continue for weeks where there is no pus formation, and in which the ovaries are greatly enlarged and the broad ligament thickened with occlusion of the tubes. He had operated on such a case where the tissues were so soft that his ligatures would cut through, and it was necessary to take up the vessels and ligate them separately. The ovary in this condition is as septic as if it contained pus. Frequently the masses felt in the pelvis following delivery or abortion are due to pelvic peritonitis, with adhesions to the intestine and omentum, and when an operation is made to evacuate pus we will often find that in the place of pus this condition is present, but where fever is kept up and the patient's condition shows sepsis it is wiser to open the abdomen, break up the adhesions, and remove the diseased appendages, which are keeping up the infection.

HOW SHALL WE MANAGE THE UTERUS AFTER ABORTION?

This was the title of a paper read by Dr. K. P. Moore, of Macon. He emphasized the necessity of clearing out the cavity of the uterus in cases of abortion, and by so doing it would be the means of preventing some of the troubles with which the gynecologist has at present to deal.

Dr. C. D. Roy, of Atlanta, followed with a paper on

COUGH—SOME OF ITS CAUSES AND TREATMENT.

After enumerating and dwelling upon the causes of cough, he touched upon the treatment. Every source of possible irritation should be found and removed. Hypertrophies were best removed with the galvano-cautery, and polypi should be thoroughly extirpated with the wire ecraseur. All septum deviations and spurs, when prominent enough to be a source of irritation, should be removed by whatever method the operator chooses.

The speaker called attention to a cough which is sometimes present about the age of puberty, seemingly dependent upon the condition of the reproductive organs or that of the blood. In *The Lancet* of December, 1890, Sir Andrew Clark cited several cases of this condition occurring in his practice in both boys and girls. Dr. Leaming, of New York, who has since called attention to this subject, has reported such a condition occurring in a young girl, suffering with chlorosis following an attack of mountain fever. The late Sir Morell Mackenzie has also reported such a case. That there is a close relationship between certain conditions of the reproductive organs and certain nervous phenomena in other portions of the body, no one will deny, for day by day the correlation of our bodily functions is growing in importance. Dr. John Mackenzie, of Baltimore, has called attention to certain nasal conditions coëxisting with a peculiar state of the reproductive organs, which from their constancy do not seem to be entirely fortuitous. In all such cases the treatment must be general, the aim of the physician *being to restore the body to as normal condition* as possible by rectifying all morbid states in individual organs.

Adjourned.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

"The Leprosy Question."

To the Editor of the Journal of the American Medical Association:

Sir:—In Prof. Blanc's lecture on "The Leprosy Question" reported in your issue of the 23d ultimo, he says that the Leprosy Investigating Committee sent out from London in Oct. 1890, have discovered the fact that *the germ of leprosy can be cultivated.* If the professor had closely followed up Dr. Arning's researches he would have learned that Dr. Arning made many cultures of the germ as early as 1884. So this is anything but a new discovery.

D. C. Newman, M.D.

Spokane, Wash., May 2, 1892.

Monument to Prof. Gross.

To the Editor of the Journal of the American Medical Association.

I heartily approve of a monument to the late Prof. Gross, and regret that the project was not undertaken sooner. But I do not think that Washington is the most appropriate place for it. There we naturally look for the monuments of those who have made their mark in the army, the navy, and the government of the country, but not for the monuments of those who have been eminent in the medical profession in other cities. Washington is not a medical centre, and it seems to me, that Prof. Gross' monument would be entirely out of place there. It ought to be placed in the city with which most of his life and works have identified, namely, in Philadelphia.

If there are any of his pupils who sat under him for three years, as the writer did, who think differently, we should like to hear from them.

Douglas Graham, M.D.,

20 Dwight St., Boston, Mass., April 27, 1892.

To the Editor of the Journal of the American Medical Association:

In looking over The Journal of May 7, page 598, I note that Dr. Lester, of David City, Neb., calls attention to a "delightful odor not unlike that of the tube-rose" which he observes after taking a dose of acetanilid. You state that it is "undoubtedly an idiosyncracy or a phenomenon having a limited range."

I can confirm in my own case Dr. Lester's statements, having frequently noted the odor, and having called the attention of others to the fact, and have had them to confirm my discovery. I have, furthermore, frequently stated to other practitioners that I knew that antikamnia contained acetanilid because this peculiar odor developed after I had taken a dose. None of the other phenol derivatives showed this odor.

T. J. Happel.

Trenton, Tenn., May 7, 1892.

NECROLOGY.

Dr. D. R. Ball, of Nelson, Neb., died April 11, 1892, at the age of 67 years. He had practiced medicine for forty-four years, twenty-five years in Iowa and nineteen years in Nebraska. He was a member of the Nebraska State Medical Society, and also of the American Medical Association. He *was thoroughly a Christian physician.*

William H. Bradley, Esq., of Chicago, recently deceased, has left us an example that embraces the sum of the virtues of the most advanced Christian civilization, as represented by industry, temperance, frugality, simplicity, purity, uprightness and public spirit. The entire community—but more especially the medical profession—is under weighty obligations to him for his influence, together with that of his associate trustee of the Newberry Library, E. W. Blatchford, Esq., in establishing the medical department of the library. The members of the Chicago Medical Society feel it a duty, as well as a pleasure, publicly to express their sense of gratitude for the enlightened generosity with which the trustees of the library have acted in this matter. Although the medical department of the library is yet in its infancy, enough has been done to give assurance of its final perfection. The full fruition of this work is not for us, but if it is carried forward in the spirit of its inception, its benign influences will extend to future ages, and bless generations yet unborn.

(Signed) Committee,
Ephraim Ingals, M.D.,
F. C. Hotz, M.D.,
R. D. MacArthur, M.D.

Chicago, May 5, 1892.

On the Influence of the Influenza on the Growth of Tumors of the Female Genitalia. By Carl Leclerc (Inaug. Diss., Strasburg, 1891).—The writer reports on nine cases of large pelvic tumors which came under observation in the Gynecological Clinic of Strasburg during the summer of 1890. In the previous winter all the patients had suffered severely from the influenza. The tumors had lately grown with unusual rapidity. The nine cases were: two subserous myomata, four ovarian cysts, two cases of generalized carcinoma of the ovaries, and a case of widespread carcinoma of the abdominal organs, the origin of which could not be accurately made out. Leclerc considers he is justified in assuming that there is an etiological connection between influenza and the rapid growth of the tumors, which were in some cases enormous. The patients a few months previously, that is, before the attack of influenza, were not even aware of the existence of the tumors. In all cases the genitalia were very congested. The congestion of the pelvic organs accompanying influenza (and other infectious diseases), and which is present for some considerable time after the attacks, is the cause of the rapid growth of the tumors. Moreover, the great prostration in influenza lowers the vitality of the cells, and the tumor, being no longer held in check by the resistance of the surrounding atmosphere, grows in all directions at the cost of those normal tissues.

The author also mentions a case of tubercul. genital. et periton. in a young woman of 20, which was only diagnosed after an attack of influenza, and which ran a rapid course. —C. Th. Eckhardt, *Centralb. f. Gynakologie*, No. 6, 1892.

The Cost of an Epidemic.—Dr. Thresh, the medical officer for the county of Essex, having obtained full returns of the late epidemic of influenza, estimates that no fewer than 450 persons died under the immediate attack, and that no fewer than 1,400 deaths occurred in the county from its direct and indirect influence. The monetary loss for the two months during which the epidemic prevailed he states at not less than £50,000, on the basis of the loss of wages of adults calculated at 12s. a week. He adds: "I am, however, afraid that had the county suffered from an epidemic among cattle, causing in the time the same number of deaths and inflicting the same pecuniary loss, the alarm produced would have been greater and more permanent."—*Brit. Med. Journal.*

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This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with ive dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, MAY 14, 1892.

RAILROAD RATES.

As the last form of last week's issue of THE JOURNAL was going to the press room we received information that the Central Traffic Association had granted our request for a single fare for round trip tickets to the Detroit meeting. The importance of this can scarcely be overestimated. As it actually means, to go or not to go on the part of very many who would like to attend the great Annual Meeting of our National Association. To others it means an ability to take a wife, or perhaps an entire family to see one of the most beautiful cities on our Continent.

To the medical profession of Detroit and the whole State of Michigan, it means an additional enlargement of an already expanded heart. Of this trouble we are not lying awake at nights and worrying about. Neither need our readers give themselves undue anxiety, for the real genuine simon pure Michigan doctor is capable of great things, when his hospitality is attacked in front, rear and on both flanks at the same time.

The Michigan and Central Traffic Associations have shown themselves as willing to do the right thing in their grants. We have made similar appeals to each of the other Traffic Associations and think we have good ground to believe we are being heard favorably. We don't say thank you to one of them for a rate of a fare and a third, that goes to every little gathering or wandering troupe, while the single fare belongs to great National Associations, where there is an attendance of more than six hundred. Hence, our reasonable and just claim. Not to grant the request is a discrimination against the American Medical Association that will call for adjustment by the Inter State Commerce Commission.

The territory of the Michigan Traffic Association is bounded by the lines of the State, that of the Central, by points on the Ohio river, Mississippi river to the Ohio, the great lakes and reaches as far east as Buffalo. To these organizations our hat is off and our very best bow is made. They have made friends with thousands of educated men, who were in a condition of irritability that would not be soothed by any other emollient than the one so judiciously applied. Let every doctor and his wife join the procession and go to Detroit. Never before has there been such a meeting as this will be.

THE SECTIONS.

A letter from the chairman of the Committee on Program, says that this little document is prepared so as to give every Section a morning and afternoon session for every day except the first, which has but the afternoon session. This arrangement he says is actually necessary, on account of the number of papers announced to him by the officers of the several Sections.

Physicians who are preparing papers to go in as volunteer contributions should this week send their titles to the Section officers, as the programs are nearing completion. Arrangements are also made for reports of discussions. The discussions will be submitted by the reporters to the officers of Sections for revision for publication. This work should all be in final shape for THE JOURNAL and in the Editor's hands at the earliest possible date after the meeting.

The professional reports of this occasion will faithfully reflect the progress of science and art as related to medicine in all its various departments. This is all beneficial to the man who reads, but doubly and trebly useful to the man who goes and hears what is read and discussed.

STATE SOCIETIES.

It is exceedingly gratifying to hear of the meetings of these organizations this year. Never before were they so large or the professional interest in their proceedings so manifest.

In fact, there seems to be a great tidal wave of professional enthusiasm abroad in all the land. Men are in attendance this year who never were at such meetings before. Not only are they present but are taking part in the work that is before the societies.

During the past week it was our pleasure to be present at the first sessions of the Ohio State Medical Society. We could not help but make a comparison of this large gathering of physicians from all parts of the State, with meetings that we attended in bygone years.

The growth of culture and attainments in our art was manifest on every hand. While the seekers for new knowledge seemed to be individualized in every member. The local profession of Cincinnati highly honored themselves in their attention to members from other parts of the State. We scarcely met a doctor at the meeting who did not announce his intention to go to Detroit along about the first of the first week in June.

From Cincinnati we went to the Louisville meeting of the Kentucky State Society, where the greetings of the Ohio Society had just preceded us. We found one of the largest State Society meetings in session that it has ever been our privilege to attend.

The papers were timely and the discussions excellent.

It goes without saying that the Kentucky doctor has a stimulus in State pride that is not always possible to be present in other States. From the earliest memories Kentucky has been the home of giants in medicine, the home of McDowell, Coleman, Drake, Dudley, Todd, Flint, Gross, Miller, the Yandells, Jackson, and a host of men whose equals were few and superiors without name. These were the men who set the pace for those who were last week at the Louisville meeting, and right bravely was the step made to the front that told of the thoroughbred race to which the present Kentucky physician belongs.

The hospitality of the occasion was just what any one might with reason expect. We will say it was wonderfully like the intellectual treat we enjoyed—rich, rare, and the measures full to overflowing. Louisville alone will require not less than two cars to carry its delegation to Detroit.

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The single fare round trip rate will save from five to ten or more dollars to every physician who lives within the territory of the Central Traffic Association. It isn't an act of prudence to talk about this or mention it to your wife, unless you seriously contemplate allowing her to have just as good a time as you expect to enjoy when you go to Detroit.

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Dr. H. O. Walker, of Detroit, is chairman of the local Committee of Arrangements. The other members of the Committee are constituted of the entire list of the Michigan State Society, every one of whom will wear a button, especially designed for visitors to press on this occasion.

COMMITTEE ON PUBLICATION OF PROGRAM.

Dr. George Duffield, 25 Washington Ave., Detroit, is Chairman.

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COMMITTEE ON REGISTRATION.

Dr. David Inglis, Chairman, C. W. Hitchcock, Angus McLean, S. G. Minor, Don M. Campbell.

Members who appreciate the value of time will correspond with either of these gentlemen and register before the meeting. The idea is a good one to act upon.

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COMMITTEE ON HOTELS.

W. G. Henry, Chairman, A. E. Carrier, O. S. Armstrong, W. F. Metcalf.

Delegates who are strangers in Detroit will do well to secure rooms by corresponding with any member of this Committee. This is also a time saving suggestion, which should be acted upon without delay, as it tends toward peace of mind.

The Detroit Hotels are:

Russell House,
Hotel Cadillac,
Hotel Normandie,
Wayne Hotel,
Griswold House,
Hotel Tacoma,
Cass Ave. Hotel,
Hotel Renaud,
Queen Elizabeth Hotel,
Rice's Hotel,
Hotel Goodman,
Griffin House.

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COMMITTEE ON EXHIBITS.

H. O. Walker, Chairman, F. W. Mann, and C. G. Jennings.

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If there is anything our readers don't know about, and of which they are in search of knowledge pertaining thereto, just write to Drs. H. W. Longyear, W. B. Sprague, or C. P. Frank, for they constitute a Committee on Information.

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A CABINET OFFICER OF PUBLIC HEALTH.

Resolutions requesting Congress to pass the bill creating this officer were unanimously passed by the Ohio and Kentucky State Medical Societies.

In the medical profession there is no division of sentiment on this subject; members of Congress should feel it, and act accordingly.

DIGITALIS IN HEART DISEASE.

There has always been much discussion as to the proper use of digitalis in valvular disease of the heart. Perhaps such difference of opinion is inevitable, but several recent writings have shown some unanimity. The sole use of digitalis is to restore compensation. It has no mysterious influence in building up a weak heart. It contracts the arterioles and causes an increase in the force of the cardiac contractions. In this way an increase in the arterial tension is produced, and a steadier flow of blood through the capillaries occurs. The steady flow through the capillaries insures the proper supply of oxygen and other food to the tissues, and thus diminishes dyspnœa. The steady flow and high tension overcome the tendency to dropsy. Thus it happens, that the cardiac compensation is restored by digitalis. Increasing experience tends to show that the objections urged against the use of digitalis in aortic disease are without real foundation. The reputed dangers of digitalis because of a supposed cumulative action, have not been confirmed.

Digitalis should never be prescribed merely because the patient has a heart murmur, but only to restore disturbed compensation. It should never be withheld merely because the lesion is an aortic insufficiency. Of all the drugs of this class, digitalis is the best, indeed is the only one to be relied upon. The dose is whatever quantity is required to restore compention. But even digitalis does not always produce e best results. Not infrequently it acts too slowly. hen the rhythm of the pulse is badly disturbed, hen its rate is irregular, and its volume fluctuating, hen the ear to the chest detects the stumbling heart, en opium accomplishes wonders. For instance, hen compensation is badly disturbed in mitral steosis, and an incompletely filled left ventricle vainly ntracts, and the heart stumbles and flutters in its forts to do its work, opium is the remedy which ives the best results. It calms and steadies the eart, and relieves the cardiac anxiety.

It must not be forgotten that the action of digitalis valvular disease of the heart cannot be taken as a iterion of its usefulness as a cardiac stimulant in brile affections, particularly pneumonia, because ew elements, mechanical and chemical, are introuced.

TYPHOID FEVER IN CHICAGO.

The New York correspondent of the *British Medil Journal* has recently written concerning typhoid ver in Chicago, recalling the fact that nearly two housand deaths occurred here from this disease in 891. The matter at present is one of world wide nterest in view of the approaching World's Fair, and t is desirable that the world should know something bout this matter besides mere figures, which are ften misleading. It must not be forgotten that hicago is a very large city, and the number of eaths from typhoid, although large, is just about qual to the number of physicians. One death per nnum from typhoid for each physician is certainly ot a very extensive showing. It means, of course, hat a great many of Chicago's 2,000 physicians did ot have a single fatal case of the disease during the ear.

It was notorious among the physicians of the city, nd indeed throughout the western country, that the atal cases of typhoid were in large measures preeded by influenza. Influenza seemed to act not nly by predisposing the individual to typhoid, but lso by seriously diminishing his resistance to the isease. It is impossible to estimate the exact influnce of influenza upon the death rate from typhoid, ut it was certainly very considerable.

There are several distinct supplies of water to the ifferent portions of the city of Chicago, and the haracter of the water supplied through these differnt channels differs considerably. The greatest umber of typhoid cases occurred in the districts aving the poorer water supply, and these districts, y the way, are not those likely to become the stoping places for visitors. The city of Chicago has quite recently made a large appropriation for the improvement of the general water supply.

There is no excitement among the inhabitants of the city on the score of typhoid fever.

SECTION OF OPHTHALMOLOGY.

The next annual meeting of this Section will be held in Detroit, Michigan, June 7, 8, 9, and 10. The Cadillac Hotel has been selected as head-quarters. The members of this Section will dine together on Wednesday, June 8, at 6 P.M., at the Cadillac Hotel. The price of the tickets will be $2 each, and can be obtained from any member of the Executive Committee, namely, Dr. S. C. Ayers, Cincinnati, Ohio, F. C. Hotz, Chicago, Ill., and Edward Jackson, Philadelphia, Pa. It is earnestly requested that each member will inform the Chairman of the Executive Committee, Dr. S. C. Ayres, whether or not he will be present.

The following is the list of papers to be read in the Section of Ophthalmology:

Dr. George Friebis, Case of Congenital Ectopia Lentis.

Dr. B. L. Milliken, Injuries to the Lens, with Cases.

Dr. Charles A. Oliver, Clinical History of a Case of Successful Extraction of a Piece of Steel from an Iris and Lens by an Iridectomy, with Subsequent Absorption of the Lens Substance and Recovery of Normal Vision.

Dr. T. E. Murrell, Eye Injuries Considered in Relation to Sympathetic Affections.

Dr. J. J. Chisolm, The Advantages of Optico-ciliary Neurotomy over Enucleation.

Dr. J. E. Weeks, Surgical Treatment of Trachoma.

Dr. Eugene Smith, New Operation for Trichiasis and Distichiasis—Galvano-Cautery.

Dr. F. C. Hotz, Thiersch's Skin Grafts in Ophthalmic Surgery.

Dr. Edward Jackson, Osteoma of the Orbit; Removal with Preservation of the Visual Functions.

Dr. J. A. White, and W. M. Gray, Orbital and Ocular Growths with Report of Three Cases.

Dr. H. Gradle, The Etiological Relation of Nasal Anomalies to Diseases of the Eye.

Dr. Dudley S. Reynolds, Gradation of Lenses.

Dr. W. Cheatham, Some Peculiar Cases of Astigmatism.

Dr. H. V. Würdemann, What May be Considered Normal Corneal Astigmatism, with Results from Keratometric Examination of One Hundred Emmetropic and One Hundred Ametropic Pairs of Eyes.

Dr. B. Alexander Randall, A Study of the Eyes of Three Hundred and Fifty-seven Boys in the Penn Charter School, of Philadelphia, with Notes on the Examination of School Children.

Dr. Edward Jackson, Latent Hyperopia.

Dr. A. E. Prince, The Fourth Degree Prism in the Correction of Hyperphoria.

Dr. George T. Stevens, On the Relations of the Motor Muscles of the Eyes to Certain Facial Expressions.

Dr. E. J. Gardiner, On the Treatment of the Anomalies of the Ocular Muscles.

Dr. C. J. Lundy, Eye-Strain and its Relation to Functional Disorders of the Nervous System.

Dr. J. A. White, Immature Cataract, and the Best Method for Hastening Maturity.

Dr. A. J. Erwin, Treatment of Incipient Cataract.

Dr. H. Knapp, Method and Results of Simple Extraction.

Dr. A. R. Baker, Pathology and Treatment of Infantile Cataract.

Dr. Leartus Connor, Heterophoria as a Cause of Rhinitis.

Dr. S. D. Risley, Conservatism in the Treatment of Disease of the Lachrymal Passages.

Dr. Charles Hermon Thomas, An Operation for Stricture of the Lachrymal Duct.

Dr. H. M. Starkey, The Treatment of Epiphora.

Dr. Thomas H. Fenton, The Value of Biniodide of Mercury in the Treatment of Eye Diseases.

Dr. H. Ernest Goodman, Clinical Methods at Wills' Hospital.

Dr. G. M. Gould, A Method of Infection and Prophylaxis of Purulent Conjunctivis.

Dr. G. C. Savage, Poultices in Ophthalmic Practice.

Dr. J. F. Fulton, Treatment of Detachment of the Retina.

Dr. S. C. Ayres, Embolism of the Central Artery or Thrombosis (?), with Report of an Interesting Case.

Dr. G. E. de Schweinitz, Embolism of the Central Artery of the Retina, with the Report of Three Cases.

Dr. R. Tilley, Report of a Case of Zonular Atrophy of the Choroid.

Dr. J. G. Carpenter, Tumor of the Cornea.

Dr. Robert D. Gibson, Treatment of Keratoconus by Means of the Galvano-cautery and Iridectomy.

Dr. R. Tilley, Monocular Diplopia.

Dr. W. Oliver Moore, Hysterical Blindness in the Male.

Dr. J. L. Minor, Diseases of the Eye of Malarial Origin.

Dr. William Dickinson, Total Decussation of the Optic Nerve at the Chiasm (Probably).

J. L. Thompson, M.D., Chairman,
Indianapolis, Ind.
G. E. de Schweinitz, M.D., Sec'y,
Philadelphia, Pa.

The Programme of the Medical Section of the American Medical Association is not yet as complete as is desired. Title of papers must be sent to the Secretary, Dr. James M. French, 250 W. Seventh St., Cincinnati, before May 15, in order to be placed upon the printed programme.

Of all diseases coming under my observation, in the last ten years, *the grip* stands at the head to lower vitality. To-day the patient is "well," to-morrow the *don't care* feeling comes. At night extremities "feel as though they would break;" sleep is gone—get up in the morning, eat a good breakfast, and for an hour or two, if exercise is not indulged in, "well" again; but after a little exercise, the uneasy, oppressive sensation in region of heart, tired and don't care, pulse quick and slightly irregular, bowels never regular, pain and frequent attacks of diarrhœa. When will this condition of things cease? I find it going on week after week, month after month, with an occasional aggravated attack, same symptoms. Brandy, whisky, quinine, coal tar preparations, strychnia gentian, iron, cocoa, digitalis, calomel, *bread*, *butter*, *meat*, notwithstanding. The old die, and the young and middle-aged don't get *well*.

E. J. Blair, M.D.
Monmouth, Ill.

SELECTIONS.

Dry and Moist Fogs.—The symptoms complained of from fog differ much according individual constitution and age. During the recent fogs in London I have inquired very carefully into the matter, and have tried to discover if there are any particular symptoms which admit of being grouped together under distinct forms of fog. To some extent it may, I think, be admitted that groupings are possible; but the distinctions are not peculiarly clear, if the term "fog" be not itself in each case defined. The character of the fog makes a decided difference.

Some fogs are moist; some are dry. On the day when I am writing this article—January 24, 1892—we have in the part of London where I reside (Manchester Square) a dense fog; but although I am unable to move from one room to another without the aid of artificial light, the hygrometer in my library records only 38 degrees of moisture in the air, and the barometer is at 30 2-10. This, therefore, may be called a dry fog; it is unpleasant, and it must be unhealthy, but it is not particularly chilling. The symptoms arising from such a fog are those of nervous irritability without feverishness and without unusual depression. I do not notice that they who are sick are very much injured by the fog, nor are they peculiarly depressed by it; those who have bronchial disease are most affected locally, and they are not so much as might be expected. The healthy complain variously. One says the fog renders the eyes irritable and causes a free secretion of fluid, with constriction about the forehead and a sense of weight in the head, but without actual catarrh. Another complains of constriction and dryness of the mucous membrane of the fauces, with an extension of the same along the bronchial tract, and with a certain amount of constriction of the chest. A third is conscious only of muscular weakness. A strong middle-aged man says he feels "as if he were drawn by a magnet whenever he seats himself in a chair"; the chair, that is to say, seems to draw him to itself; and when he lies down in bed he feels as if all his body were drawn earthwards in a similar manner. In plain language, the fog makes him physically feeble. On the other side I have found some persons, who, although advanced in life, are in excellent condition, and say they feel in good spirits, but regret they cannot, because of the darkness, get out of doors for exercise with their usual facility. I notice now also, as I have noticed in previous conditions of a similar character, that no great excess of catarrh, rheumatism, or neuralgia prevails. One, all but confirmed, rheumatic sufferer, under my frequent observation, is at this moment freer from pain and more active than she has been for many years past.

Those who have chronic bronchitis or asthma during dry fog with a high barometer suffer from irritation in the bronchial passages, and expectorate a secretion which for colour approaches soot-black. They do not, however, complain seriously, and one asthmatic I know is relieved considerably. Altogether the dry fog is a troublesome, but barring physical accidents incident to the darkness it causes, it is not a dangerous enemy.

The moist fog is quite a different enemy. It is directly bad and dangerously bad, whether it occur in warm or mild or in cold weather. It is a cause of chill, of catarrh, of bronchial mischief, of rheumatism, of dyspepsia, and of depression of mind and body. It intensifies the symptoms of all the acute diseases, and it aggravates those of a chronic character. The primary evil of the damp fog is that it suppresses the function of the skin and prevents the free elimination of water from that eliminating surface. Under this the balance between the venous and arterial blood is too equal, and the venous blood fails to exercise its full power of absorption from the different organic structures. There is an approach to osmotic stasis which must at all times be a dangerous condition, a condition at best incompatible with healthy life. Under such condition there is an imperfect oxidation, an accumulation of dead material within the body, which—to use a commonplace simile—like dust in the works of a watch or a clock, makes action slow and laborious. In a dry fog evaporation may continue unchanged; in the moist it never can. Again, in the moist fog the action of the water vapor, in which the body is enveloped, is rendered more perilous by the fact that the water carries away, with great rapidity, the vital heat. The clothing around the body becomes charged with moist vapor; the surface of the body is in contact with the moisture of the clothing; the moisture of the clothing in contact with the moisture of the air, and every wind or draught that blows carries off the radiating heat and leaves the body cold. In that kind of air surcharged with moisture as well as dust, the statical electrical machine will not act in the free and ready manner in which it does in the dry fog. The living body is in the same predicament.

So it turns out, under observation, that the state of the bodies of men tells of itself the nature of a fog, without the necessity of referring to hygrometers or other physical instruments; in fact, the body of man is itself a test instrument. In the moist fog there are experienced all the states of an impeded action. A cold passes readily into bronchitis or pneumonia, acute or chronic rheumatism, congestion of the liver, a disturbance of the stomach or bowels, or a nervous outbreak of pain, as well as into depressions physical or mental, or physical and mental.

These facts have an immediate and all-important bearing on practice. Hitherto, the word "fog" has too easily been accepted as indicative of one state of the outer air alone, and therefore indicative of the same dangers under all circumstances. Darkness only has been accepted as the sign of evil. This is not correct. The proper exposition would be more nearly rendered by saying that a dry fog is inconvenient, a moist one dangerous. When I enter my consulting room in the morning to find it besmirched with fog, with the windows darkened by a cloud outside, I turn to the hygrometer and the electric machine near by. If I find the air free of excess of moisture, and if a few turns of the electric machine give me good sparks, with ozone, I know that whatever the temperature may be, the fog is a dry fog. But if the moisture of the air be great, and the electric spark all but impossible to obtain, I know it is a moist fog, and on those distinctions my recommendations largely turn for the day. Against the dangers of the moist fog I warn every patient; I request all to keep in a warm atmosphere, rendered as dry as it can be made; and in particular cases I instruct how to filter the air and dry it specially as it enters sick-rooms; I forbid outdoor exposure, and I take great care in directions as to clothing and regimen. When the fog is dry, I omit many of these precautionary measures, and, except advising that a porous comforter be worn over the mouth and nose in order to filter the atmosphere, I enforce none of the stringent rules, nor any rules stringently, as in the case of the moist fog. Also in regard to travelling I make this marked difference: that in the moist fog no risks must be accepted by the sick, whilst in the dry fog, with moderate precautions, travelling may be carried out with comparative safety.

I notice, lastly, as between the effects of dry and moist fogs, that pain is a marked and distinctive test. Rheumatic pains, neuralgic pains, and toothaches are so specific to moist fogs, they will, of themselves, differentiate one fog from another.—*The Asclepiad.*

ON THE ACTION OF CARBOLIC ACID AND OIL OF CLOVES APPLIED LOCALLY IN LUPUS.—Unna, who had already recommended these remedies in the treatment of lupus, has studied the effects of repeated pencillings in sections made from portions of the tissues while under treatment, and has fully described the appearances. As regards carbolic acid he draws the following conclusions:—Carbolic acid attacks preferentially the older and already disorganized elements, and rapidly induces molecular destruction—therefore the disappearance of the lupus plasmoma and fibroma under cauterization by carbolic acid is perfectly conceivable. Whether in this process of absorption the tubercle bacilli persist or die, can, for known reasons, be better determined clinically than histologically. In accordance with his previous experience, he is certain that in some cases single or repeated active cauterization with carbolic acid can cause the disappearance of lupus nodules without further treatment. The number of cauterizations must be suited to the depth to which the nodules penetrate, and they must be persevered in steadily and without intermission with undiluted carbolic acid. As regards clove oil, clinical observation teaches, that by timely interrupted application of clove oil till separation of the whole epithelium occurs, all the phenomena soon show retrogression, with diminution in the volume of the lupus fibroma and plasmoma. A better preliminary to absorption than the far-reaching interstitial œdema which occurs can hardly be conceived. If, therefore, the distinct action of clove oil on the lupus nodules is slight, in a therapeutic point of view insufficient, and cannot compare with cauterization with carbolic acid, yet the basis for its employment is to be found in the slighter directly injurious action, in the absence of complete necrosis, and the small amount of harm done to the nuclei, while the indirect effect, the reaction in form of serous inflammation, is much more considerable than after cauterization by carbolic acid. The cauterization with clove oil does not with certainty act destructively on the tubercle bacilli, while such an effect of carbolic acid is, at least, probable from clinical experience. —*Monatshefte fur prakt. Dermatologie.*

ORIGIN OF THE TERM "LA GRIPPE." (*L'Union Médicale*, Paris.) —A writer in the *feuilleton* of this paper is astonished that his countrymen should use the word "influenza," when they have long had a term of their own for this troublesome malady with much more appropriateness and, as it ought to have, more spiteful a sound. It was so first used, he tells us, in 1743, by Louis XV., when the disease was raging in the early months of that year, in which rain, frost, ice and snow were most dismally commingled week after week, and rheums and fluxions of the chest made all men miserable, and even royal mistresses unpresentable; and from the suddenness of the attack: "*Le roi nomma cette maladie la grippe.*" And in 1427 there seems to have been an epidemic of the same or a very similar kind, for in quaint old bourgeois French we read: "Item, at this time, about fifteen days before the feast of Saint Rémy (that is towards the 15th of September, S. Rémy's day being October 1), there came a corrupted air amidst us, and from it a very evil sickness which they call *la dando*, and one can but endure it as long as it lasts. And it begins with violent rackings in the reins and loins, just as if one had the gravel, with strong cruel pains; and after that long shiverings, and for VIII or X or XV days afterwards one can neither drink, nor eat, nor sleep, more or less, and then cometh a cough so bad that at sermon time one cannot hear the sermoner for the great noise of the coughers. And one sees not man nor woman but with the mouth and nose all red and sore with the rheum, and when two gossips meet they say: 'Hast thou had the dando yet?' And if she say no, the other replies, coughing all the while, 'Oh, take care, or truly it will cost thee dear.'" A Portuguese translation (*A. Med. Contemp.*) adds: "Dando, dand, dandy-fever, dengue or influenza—all the same thing."—*The Provincial Medical Journal.*

PRESENTATION OF A YOUNG MAN OF SEVENTEEN WITH CONGENITAL SPASTIC PARALYSIS.—By Lorenz (*Internat. klin. Rundschau*, 1891). Patient's first attempts to walk were made at five years of age. The spasm chiefly affected the flexors of the knee-joint and the extensors of the foot, leading to contracture of the knee and talipes equinus. Lorenz distinguishes three groups of cases: (1) those with talipes equinus; (2) those with flexion-contracture of knee-joint; (3) adduction-contracture of the thigh. Bearing in mind that the spastic gait is not due to paralysis of muscles, but rather to overaction on the part of certain sets of muscles, Lorenz determined to reduce or eliminate the action of the disturbing muscles by tenotomy, tendectomy or neurectomy. In talipes equinus it is sufficient to tenotomise the tendo-Achillis, followed up by fixation of the foot in the calcaneal position (talipes calcaneus). The lengthening of the tendon counteracts the effect of the spasm on the ankle-joint. In cases of adduction-spasm of thighs, Lorenz in four cases excised portions of both branches of the obturator nerve. Where there is flexion-spasm of the knee-joint he recommends simple tenotomy of the biceps femoris, and excision of about one to two centimetres of the tendons of the semi-membranosus, semi-tendinosus, and gracilis, after freely exposing them. With regard to the patient presented by Lorenz, he treated ten tendons at one sitting, partly by tenotomy and partly by tendectomy. The result is noteworthy. The patient, who previously could scarcely stand, can now walk even without assistance, and is for hours on his legs.—Grisson, *Centralbl. f. Chir.* No. 6, 1892.

THE SUPRA RENAL CAPSULES (*Le Progrès Médical*, Feb. 19, 1892).—Messsrs. Langlois and Abelous have come to the conclusion that there is naturally formed in the blood a poison, similar in action to curare, which in health is destroyed by the supra renal capsules. Their conclusion is based on the fact that when these organs are destroyed, the animal dies as though curarized, and further by the fact that the blood of animals taken just before their death produces the symptoms of curare in a healthy frog.—*Provincial Medical Journal.*

MISCELLANY.

PRELIMINARY PROGRAM, AMERICAN SURGICAL ASSOCIATION.—This Association will meet in Boston, Mass., Tuesday morning, May 31, and June 1 and 2, 1892, in the hall of the Natural History Society on Berkeley Street.

Special subjects for discussion:

1. "The Treatment of Uncomplicated Fractures of the Lower End of the Humerus and of the Base of the Radius," by John B. Roberts, M.D., Philadelphia, Pa.

Discussion by Drs. John E. Owens, of Chicago, John H. Packard, of Philadelphia, C. B. Porter, of Boston, and J. Ford Thompson, of Washington, D. C.

2. "Fibroid Tumors of the Uterus," by John Homans, M.D., Boston, Mass.

Discussion by Drs. F. E. Lange, of New York, M. H. Richardson, of Boston, A. M. Vander Veer, of Albany, J. Ewing Mears, of Philadelphia, and George R. Fowler, of Brooklyn.

3. "Surgical Operations in Persons Suffering from Diseases not connected with that necessitating the Operation, such as Chronic Malarial Poisoning, Diabetes, Organic Heart Disease, etc.," By W. T. Briggs, M.D., Nashville, Tenn.

Discussion by Drs. T. F. Prewitt, of St. Louis, Hunter McGuire, of Richmond, and W. W. Dawson, of Cincinnati.

4. "Surgery of the Tongue," by N. P. Dandridge, Cincinnati, Ohio.

Discussion by Drs. D. W. Cheever, of Boston, D. W. Yandell, of Louisville, and L. McLane Tiffany, of Baltimore.

5. "Conditions demanding Excision of the Globe of the Eye," by W. H. Carmalt, M.D., New Haven, Conn.

Discussion by Dr. Wm. Thomson, Philadelphia, Pa.

6. "Ancient Contractures of the Hip and Knee Joints," by T. F. Prewitt, M.D., St. Louis, Missouri.

Discussion by Drs. DeForrest Willard, of Philadelphia, and Robert Abbe, of New York.

7. "Report of Operations upon Spina Bifida and Encephalocele, with remarks," by A. T. Cabot, M.D., Boston, Mass.

The Association will meet on Wednesday morning, in the Amphitheatre of the Massachusetts General Hospital, and on Thursday morning in the Amphitheatre of the Boston City Hospital. PHINEAS S. CONNOR, President.

J. R. WEIST, Secretary.

THE second meeting of the Conference of the Medical Examining and Licensing Boards will meet at Detroit. Time and place will be announced hereafter.

NEW MEXICO FOR CONSUMPTIVES, ETC.—Report of committee of Albuquerque physicians in regard to the class of patients who are benefited or recover by residence in the climate of Albuquerque, New Mexico, and vicinity:

First: All uncomplicated cases of nasal, pharyngeal, laryngeal, acute or chronic inflammations, accompanied with a moist discharge, are benefited or recover.

Second: Bronchitis of all types, except those cases in which there are indications of bronchial dilatation, is relieved.

Third: Cases of chronic pneumonia, chronic pleurisy with non-expansion of lungs, are benefited by the decrease of air pressure and consequent increase of chest expansion.

Fourth: All cases of tubercular trouble, except such as hereafter noted when accompanied by slight pyrexia or acute symptoms, or in which hereditary or family predisposition are well marked, are benefited by residence, with greater or less arrest of disease.

Fifth: "In this altitude, which is only 5,000 feet, as a rule, a tendency to hæmorrhage is diminished." This does not refer to those cases of hæmorrhage due to erosion or rupture of large vessels.

Sixth: We do not recommend this climate for those cases of phthisis or tuberculosis in which the disease has advanced to such an extent as to give rise to habitual fever of two or more degrees, decided emaciation, extensive consolidation, emphysema, profuse hæmorrhages, heart complications, with *rapid pulse*, or in cases in which well-defined cavities exist.

Seventh: Uncomplicated cases of asthma are benefited or recover.

Eighth: We have found that while the climate in this vicinity gives decided encouragement to the classes of cases that we have indicated, we want to emphasize the fact that we deem it absolutely necessary that patients find mental or light physical employment, thus distracting their thoughts from their illness. Few recover who sit around the hotels in idleness. Further, we desire to impress this fact upon the profession throughout the country who send patients to this part of New Mexico, viz.: that patients suffering from chronic pulmonary diseases, especially those patients on whose system the disease has made decided impression, should remain permanently in a high altitude.

Ninth: We advise all patients coming from lower altitudes, while here, to seek residence on the table-land (mesa), or "at least out of the valley proper." James H. Wroth, M.D.; W. G. Hope, M.D.; G. S. Easterday, M.D.; A. A. Allison, M.D.; J. G. Mauon, M.D.; Albert E. Ealy, M.D.; S. M. Haslea, M.D.; H. F. Hall, M.D.; C. F. Wilkin, M.D.; J. P. Kaster, M.D.; G. W. Harrison, M.D.; Strickland Aubright, M.D.; W. T. Shepard, M.D.

THE second annual meeting of the American Electro-therapeutic Association will be held in New York, October 4, 5, and 6, 1892, at the New York Academy of Medicine, 17 West 43d Street. H. R. BIGELOW, M.D., Secretary, W. J. MORTON, M.D., President.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 1, 1892, to May 6, 1892.

Lieut.-Col. William D. Wolverton, Asst. Medical Purveyor U. S. A., is granted leave of absence until July 10, 1892.

Capt. Louis W. Crampton, Asst. Surgeon U. S. A., is relieved from further duty at Ft. Townsend, Washington, and will report in person to the commanding officer, Ft. Spokane, Washington, for duty at that station.

Capt. Aaron H. Appel, Asst. Surgeon, is relieved from duty at Ft. D. A. Russell, Wyo., and will report in person for duty to the commanding officer, Ft. Buford, N. D., relieving Capt. Julian M. Cabell, Asst. Surgeon, who will then report in person for duty to the commanding officer, Ft. D. A. Russell, Wyo.

Capt. Robert R. Ball, Asst. Surgeon, is relieved from further duty at Ft. Spokane, Washington, and will report in person to the commanding officer, Ft. Townsend, Washington, for duty at that station.

First Lieut. Alfred F. Bradley, Asst. Surgeon U. S. A., will, upon the arrival of Acting Asst. Surgeon George D. Deshon, U. S. A., at Columbus Bks., O., return to his proper station (Omaha, Neb.).

Capt. George McCreery, Asst. Surgeon U. S. A., leave of absence granted for seven days is extended fifteen days.

First Lieut. Henry D. Snyder, Asst. Surgeon U. S. A., granted leave of absence for one month and fifteen days, to take effect when his services can be spared by his post commander.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for two Weeks, Ending May 6, 1892.

Surgeon L. G. Heneberger, detached from U. S. S. "Iroquois," and granted three months' leave of absence.

Asst. Surgeon J. E. Page, detached from U. S. S. "Iroquois," and ordered to the receiving ship "Independence."

Surgeon J. R. Waggener, detached from U. S. S. "Kearsarge" and Naval Hospital, New York, and placed on waiting orders.

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ORIGINAL ARTICLES.

THE WORK AND PAY OF HEALTH OFFICERS.

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BY HENRY B. BAKER, M.D.,
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Mr. President and Members of the State Medical Society:—I wish, first of all, to thank the Section of Practice of Medicine for this opportunity to place before you what I have to offer. I have assumed that I would be expected to deal with some subject likely to be of interest to the general practitioners, and which my own occupation might enable me to have more than ordinary opportunities for studying. Inasmuch as the State law now requires that, whereever it is practicable, every health officer shall be a physician, and there are now fifteen hundred health officers chosen in Michigan every year, there is a possibility of my subject being of interest to a considerable proportion of the general practitioners in the State, because many of them may, at some time, be health officers, and because, if my views were to be carried out, nearly fifteen hundred practitioners would devote the greater part of their energies to official duties, and not to the practice of medicine.

Although the title of this address is "The Work and Pay of Health Officers." I desire, at this time, to deal especially with the subject of pay. My belief is that the compensation of the health officers, generally throughout the State, with only a few exceptions, is ridiculously small and inadequate; and that the best interests of all concerned are injured thereby, and will be best conserved by such a general change as shall recognize the fact, as old as the scriptures, that "the laborer is worthy of his hire" or reward.[1] I suppose it is not necessary for me to laboriously prove that this proposed change would be a good thing for the medical profession in this State; if it is ever questioned I will try to prove it, on some other occasion; but it may not. at first glance, be so apparent that it would be a good thing for the sanitary interests of the whole people of the State. Therefore the reasons for a belief that such is the fact may well be stated.

At first thought, it might seem that gratuitous services by physicians acting as health officers would always be for the best interests of the people generally; and, in the beginning of any movement for sanitary reform. it undoubtedly is for the best interests of the people. The people of Michigan owe a great debt of gratitude to the philanthropic physicians throughout this State who have generously performed services for the public which the people generally were not sufficiently informed to ask for, to pay for, or to appreciate, but which have tended to place Michigan in the front rank of progress in sanitary reform. The officers and members of this State Medical Society, especially, have contributed very greatly to place Michigan in the lead in sanitary progress.

But, in the evolution of organized society, there come times when methods, which have served exceedingly useful purposes, need to undergo slight modification in order better to fit them for the changed conditions. In my opinion, the time has arrived when it will best serve the people of Michigan to gradually educate them into a knowledge of the real value of public-health work, and into an appreciation of the fact that it is best for corporations and governments, townships, cities and villages, as it has long been known to be best for individuals, not to try to get something for nothing. In the long run, an effort to get something for nothing is unsuccessful. Such efforts generally lead the individual to the penitentiary, and the government to a penitential mood.

The people have gradually so increased in appreciation of the importance of public-health work that their representatives, the law-makers, have provided so much work to be done by health officers, and have affixed to the non-performance of the duties such penalties that no ordinary practitioner can without adequate compensation afford to take the chances of being held accountable under the law for the neglect of official duty. But the main reason why it does not now seem to be best that the duties of the health officer should generally be performed gratuitously, is that no ordinary practitioner can afford to, and it is getting so that generally no competent physician will, for any small sum, neglect his practice and do all that the law and public sentiment now expect to be done by the health officer.

The amount of service that is now required of the health officer is frequently not appreciated by the physician until he has accepted the office, when he finds that, owing to comparatively recent laws, more is required of him than he anticipated.

What is needed is some method whereby not only physicians, but the people generally, who have to pay the health officer, shall become informed of the nature, extent, and importance of the work of the health officer. It seems to me that, as might have been expected from the occupation, those who have managed the school interests in Michigan have shown most wisdom in their methods of impressing the people with the importance of their work, and also in obtaining from the people the necessary money to carry on the school work. We need to adopt their methods. Whoever will examine his receipt for taxes will find that the main items are for school purposes. Yet the people vote to assess themselves for those purposes, after the subject has been carefully put before them. And those who have the interests of the schools in charge have opportunity, and they carefully prepare and put before the people every year, at the school meeting in September, the amounts of money which it is estimated should be used for school purposes, and facts and reasons why those amounts are needed. There should be a law similar to the school law, relative to public-health affairs. Surely the interests of the health and life of the whole people, including the children, are of more consequence than the school education of the children alone!

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[1] 1 Timothy, v, 18, and Luke x, 7.

All that is required to make this apparent, is such an opportunity as the school laws provide for placing the facts before the people at the time the vote is taken to adopt the estimates of those who have this branch of the public service in charge.

How to get Money for Public Health Work.—Have a public meeting of citizens of the city, village or township, at which meeting the amount of money to be assessed and collected for public-health purposes shall be voted upon. Have the local board of health present to that meeting estimates of the amounts proper to be collected. The health officer should be prepared, and should present to this public meeting the facts, and reasons why expenditures for public-health work are in the public interests. It ought not to be difficult to convince the people generally that the lives and health of the people themselves are of more consequence than any other subject for which they collect taxes.

Let us suppose that opportunity is given the health officer to put before the people of a township, village or city the facts and reasons for public-health work; what can be presented?

This can be presented:

1. The health officer can assure the people that, if they are situated in the average locality in Michigan, the death-rate will average about 17 per thousand inhabitants per year; that, of those deaths, about 11.8 per cent. will be from consumption, 6.5 from diphtheria, 2.7 from scarlet fever, and 3.2 from typhoid fever. He can assure the people that these are all communicable diseases, that they are all preventable through measures which are now well known to sanitarians; and, what is more to the point, he can assure them that reliable statistics, collected by the Michigan State Board of Health, from the experience of local officers in Michigan, have proved that (even after the disease has been introduced) about 75 or 80 per cent. of the cases and deaths from diphtheria and from scarlet fever are prevented by measures which a good health officer, acting in accordance with our present laws, and supported by the people of his locality, can inaugurate and maintain. Knowing approximately the population of the township, village or city, the health officer can readily compute the saving of life which such a saving, as has been proved to occur under such measures, would be for that number of inhabitants. Let us suppose a small city, of four thousand inhabitants—then the deaths from all causes, at the rate of 17 per thousand per year, would be 68; the deaths from consumption (11.8 per cent.) would be 8; the deaths from diphtheria (6.5 per cent.) would be about 4½ (4.4); the deaths from scarlet fever (2.7 per cent.) would be nearly two (1.8); the deaths from typhoid fever (3.2 per cent.) would be a little over two. If 75 per cent. of these deaths were to be prevented, there would be a saving of the lives of about three persons from death by diphtheria, about one from scarlet fever, and one from typhoid fever. These five persons constitute a part of the productive energy of the city upon which its prosperity depends. They are worth to the city, for what has been expended to raise them, and for what they will earn in excess of costs of maintenance, at least as much each as a good slave would sell for before the war, which was about the same as the statisticians compute as the value of an ordinary laborer—say for the adult person one thousand dollars, and for each of the children one half of that amount. The four who are saved from diphtheria and scarlet fever would be likely to be children, while the one saved from typhoid fever would be likely to be in the prime of life. The actual money value of the five persons, therefore, would be three thousand dollars. If a city of four thousand inhabitants should vote to use three thousand dollars per year in public-health work, I have no doubt whatever but the five lives, above mentioned, could be saved, from those three diseases alone; and probably lives could be saved from other diseases. Then how much better to save those lives, and avoid the grief and sorrow which would result from their loss. Again, the money used would be only the amount which, without effort for restriction, would be lost to the city—the actual outlay would not be at all increased. It seems to me that any meeting of citizens, of ordinary intelligence, could be made to see that the lack of public health work is a wasteful extravagance, and that it is better to use a certain sum of money to pay a health officer than to permit the death of loved ones that have actually cost as much as that sum, and who, if they die, are a dead loss, in more than one sense.

The facts are applicable to every locality in Michigan, making allowance for a greater or less number of inhabitants.

This may seem to be an unusual topic for the annual address which we denominate an "Oration"; but I believe it is one in which the medical profession have great interest, and certainly should have great influence in its decision. I have given you some of the reasons why I favor legal provision for the presentation locally, to all voters throughout the State, of the benefits to be expected from sanitary work, after the manner of the meetings to determine the amounts of money to be raised for school purposes.

I know it is not customary to discuss "Orations"; but this is a practical subject, of considerable general interest to the entire profession; if agreeable to the society, I shall be glad to have the subject discussed.

INFECTED FOOD.

Read before the Michigan State Medical Society, May 5.

BY VICTOR C. VAUGHAN, M.D.,

OF ANN ARBOR, MICH.

Mr. President and Gentlemen:—Numerous examples of poisoning from cheese, canned salmon, sausage and other articles of food, have been reported within recent years. It has also been demonstrated that, in more than one instance, the milkman has distributed the germs of typhoid fever along with the lacteal fluid. There has been a great deal said about the spread of tuberculosis through infected meats. All of these are subjects of the greatest interest to the practicing physician. He does not know at what moment he may be called upon to treat a case of poisoning from canned meats. When he is confronted with an epidemic of typhoid fever, he must inquire into its origin, and at all times he needs to know, or wishes to know, all that can be known concerning the spread of tuberculosis. For these reasons, I have been led to collect the best information I can find upon these points, and to present the same in a condensed form in this paper.

The infection of meat and milk may be discussed under the following heads:

1. Meat and milk, even when derived from perfectly healthy animals, often becomes infected with poison-producing germs.
2. The infection may be due to the inoculation of these foods outside of the body of the animal from which they are derived, with specific pathogenic microörganisms.
3. The infection may be due to a diseased condition of the animal from which the foods are obtained.

I wish to give especial emphasis to the question of the infection of meat and milk, and their products, with poisonous saprophytic germs. I desire to emphasize the fact that these foods, even when derived from perfectly healthy animals, and when kept free from infection with specific pathogenic bacteria, may and often do develop most potent poisonous properties. It is not necessary that food be infected with some specific microörganism before it can be rendered unfit for use. A sample of good milk may be divided into two portions, and one of these, under certain conditions, will become highly poisonous in a short time, while the other, under different conditions, may remain good and wholesome. Of two cans of salmon prepared from the same fish, and at the same time, one may become highly poisonous, while the other may remain good.

I will illustrate this by referring to cases of poisoning by frozen custard which I had an opportunity of investigating a few years ago. The milk supply to a certain small village had never been questioned. It was in constant use by some fifty or more people, and no cases of illness had arisen which could, in any way, be attributed to the milk. In preparation for a festival, some gallons of this milk were obtained, and made into custard. The custard was divided into two portions, one of which was flavored with vanilla and the other with lemon. The lemon custard was eaten without harmful effect, while a teaspoonful of that flavored with vanilla caused nausea, vomiting and purging. Of course it was quite natural to conclude that the vanilla was the poisonous agent, because at first it seemed that the only difference between the samples was that due to the use of the flavorings. Fortunately, however, not more than half of the vanilla in the bottle had been used, and the non-poisonous character of this flavoring was demonstrated by Dr. Novy and myself, each of whom took of the remainder without being harmed. The real difference between the portions of custard is explained by the following: The lemon custard was frozen immediately and was sent to the festival, while the vanilla custard stood for two hours before being frozen in a very filthy room, the air of which was said to have been like that of a privy vault. The room had some weeks before been used for a butcher shop, and had never been cleaned, and the bits of decomposing meat rendered the air foul, and supplied the germs with which the custard was infected.

Another illustration of this kind of infection was observed by me in the Milan cases of milk poisoning. The milk remained good and wholesome until it became inoculated with the germs in the infected pantry.

In these illustrative cases, the facts that the germs did not originate in any specific disease, and that they grew in the food before it was taken into the body of the consumer, demonstrate the correctness of the following proposition:

Some of the bacteria with which meat and milk become infected belong to the saprophytic microörganisms.

But it may be asked, How is it possible for a truly saprophytic germ to induce disease and death? This may occur in either of two ways: 1. The poison formed in the food before it is taken may be the sole and sufficient cause of the symptoms and death. 2. The germ may continue to grow after it is taken into the body with the food.

Let me point out here the fact that the distinction between intoxication and infection is not so easy and certain as we have supposed. It is customary to pronounce those cases in which the symptoms occur immediately, or within three or four hours after eating the food, as due to intoxication; while those in which the first symptoms appear later are said to be due to infection. In the former, the poison is supposed to be formed in the food before it is eaten; while in the latter, it is supposed to result from the growth and multiplication of the germs within the body. That there is a large opportunity for error in this distinction, must now be conceded by all who are acquainted with the more recent researches on the bacterial poisons. We now know that some of these poisons require a period of incubation, when employed in small doses, which often extends over many days. This was found to be true by Brieger and Fraenkel, in their studies of the chemical poisons of diphtheria, and I have observed the same in my experiments with the products of certain saprophytic bacteria found in the stools of children suffering from summer diarrhœa, and in others obtained from germs found in drinking-water. The fact that the first symptoms do not appear until many hours, and even a few days, after the food has been taken, does not seem to be absolute proof that the bacteria continue to live and multiply within the body. In some instances the germ undoubtedly does grow and multiply after its introduction into the body, and it may be found in the intestines or other organs after death. However, a germ may grow in the intestines and still be a saprophyte. The food in the duodenum has no more vitality than that in the nursing bottle. Moreover, the secretions which are poured into the intestine are not supposed to be possessed of vitality. A germ which will grow in milk in a culture flask, kept at the temperature of the body, and produce a poison, may grow in milk in the intestine of the child and produce the same poison, provided it is not destroyed or modified by some secretion of the body.

Some of the saprophytic bacteria with which food becomes infected are under certain conditions capable of living, for a time at least, in a parasitic manner. Thus, Dr. Novy found the same germ in a cheese and in the spleen and liver of animals which had been killed by feeding on the cheese. However, the parasitic nature of this germ, or, in other words, its capability of overcoming the resistance of the living tissue, seems to have been feeble, and instead of increasing in virulence as it passed through successive animals, it became markedly less toxicogenic, and finally was without effect upon animals. I infer from this, and from similar phenomena which I have myself observed in experimenting with saprophytic germs from poisonous foods, that the toxicogenic properties of these organisms are best manifested when they are grown on dead matter.

The poisonous effects of the bacteria are also largely influenced by the conditions under which they develop. The most important of these conditions are the nature of the infected food, the temperature at which they grow, the amount of oxygen supply, and the time which elapses between the infection and the consumption of the food. I have been convinced that the poisonous properties of certain canned meats are, in some instances, wholly due to the fact that the germs which they contain grow practically without any air supply. The following brief report of a case of poisoning with canned salmon, supports the belief. Early last June, Mr. K., a vigorous man of 34, ate freely of canned salmon. Others with him at the table remarked that the taste of the salmon was peculiar, and refrained from eating it. Twelve hours later Mr. K. began to suffer from nausea, vomiting, and griping pain in the abdomen. Eighteen hours after eating the salmon I saw him. He was vomiting small quantities of mucus colored with bile at frequent intervals. The bowels had not moved, and the griping pain continued. He was covered with a scarlatinous rash from head to foot. His pulse was 140, temperature 102°, and respiration shallow and irregular. The stomach and large intestines were thoroughly washed out, the former by inducing free vomiting by the administration of copious draughts of warm water with mustard, and the latter by injections of large volumes of water. After this 10 grs. of calomel, followed in two hours by a bottle of solution of citrate of magnesia, were administered, for the purpose of cleaning the small intestine. After these medicines had operated freely, the patient began to improve. The next day the rash had disappeared, but the temperature remained above the normal for five or six days, and it was not until a week later that the patient was able to leave the house.

I obtained the remainder of the salmon and submitted it to various tests. In the first place, the absence of inorganic poisons was demonstrated. In the second place, the subcutaneous injection of 20 drops of the fluid expressed from the salmon caused evident disturbance in a white rat, but did not kill the animal. The only germ which could be found, either by direct microscopic examination or by the preparation of plate cultures, was a micrococcus, and this was present in the salmon in great numbers. This germ grew fairly well in beef-tea, but the injection of 5 cc. of the beef-tea culture into the abdominal cavity of white rats, rabbits and kittens, failed to induce death. However, this micrococcus, when grown for twenty days in a sterilized egg, after Hueppe's method of anærobic culture, produced a most potent poison. The white of the egg became thin, watery and markedly alkaline. Ten drops of this, given subcutaneously, sufficed to kill white rats.

Evidently, in the preparation of the salmon, this can was not sterilized. It was sealed, and for months, possibly longer, this germ had grown anærobically, and had elaborated a chemical poison.

On the other hand, I have known of several instances in which canned meats were not poisonous when first opened, but soon became so on standing exposed to the air. In these cases, the meat must become infected after the opening of the can.

Another important factor in influencing the effects of these infected foods, is to be found in the condition of the person eating the food. Especially is this true of the condition of the stomach. A good, healthy gastric juice will suffice to destroy many of the harmful things which man puts into his stomach. The following case, which was under the care of Dr. C. G. Darling, to whom I am indebted for these notes, illustrates this point:

"On April 12, 1892, two young men ate a sppper consisting largely of canned salmon. Mr. A. is strong, robust, and drinks occasionally. Mr. B., age 28, has suffered from indigestion for months, and has found it necessary to select his food with care, but on the night in question he proposed the supper of salmon, of which he was very fond. Mr. B. took the salmon from the top of the can. A short time before the supper A. took two glasses of beer, but B. did not take any. The next morning B. had a chill, which was followed by severe headache and pain in the abdomen. However he went to the store in which he clerked, and remained there until 9:30 A.M., when his employer, observing his illness, sent him home. During the day he attempted several times to vomit, but was unable to do so. I was called to see him at 7 P.M., April 13, and found his condition very serious. His mind was clear. He had severe and constant pain in the head; pulse 120 and feeble; respiration 20. There was a slight eruption on hands and face, consisting of slightly elevated red spots, about the size of a split pea. The spots were more abundant on the right than on the left side of the face, probably because the right side was on the pillow most of the time. The eyelids were red and swollen, giving off a profuse muco-purulent secretion. There had been no movement of the bowels for thirty-six hours. I prescribed for him, but afterwards ascertained that the medicine was not procured until the following morning. I visited him at 8 A.M., April 14, and found the temperature 102.5°, the eyelids more swollen, and the eruption increased. During the day and the following night, there were eight movements of the bowels in response to medicine. The patient gradually became unconscious. The respiration was increased on account of the high temperature, but at no time was there any involvement of the lungs. The kidneys remained inactive. There was no profuse sweating. The extreme pain in the head persisted. During the night he was aroused with difficulty, but took medicine and nourishment when they were placed to his lips. On the morning of April 15, the fingers were purple to the second joint, but were very warm. The temperature had risen to 105° in the axilla, and was not lowered by repeated bathing, but continued to rise and was 107° just before death, which occurred at 8 P.M. Post-mortem examination was not made."

I will here make some general remarks concerning the nature of the chemical poisons found in meat and milk, and their products, as a result of infection with these saprophytic bacteria. These poisons may be grouped in the same manner as those which are produced by the more strictly pathogenic germs. First, there are those which combine with acids forming salts, and which are designated as ptomaines. The ptomaines which are found in foods as a result of the activity of the saprophytic germs' may truly be called putrefactive alkaloids. Then there are poisonous bacterial proteids. Poisoning with foods is often designated ptomaine poisoning, but my observation has led me to believe that of these two classes, the proteids are more frequently present in infected foods. It has been asked whether or not it is possible to induce poisonous effects by the administration of these proteids by the alimentary canal. Is it not true that they are non-diffusible, and that they would be inert if given by the mouth? There is not enough experimental evidence in our possession at present, to enable us to answer these questions with certainty, but we have good reasons for assuming that some of them are absorbed from the intestines. In the first place, we must remember that diffusion through a dead animal membrane and absorption by the living intestinal walls are not identical. Unchanged egg albumin will not diffuse through a dialyzer, but that it may be absorbed by the intestines has been demonstrated. Mitchell found that some of the proteid poisons of the venom of serpents are absorbed by the unbroken mucous membranes.

In the second place, the bacteria in the food may penetrate the intestinal walls and elaborate their chemical poisons in the spleen, liver and other organs, as the bacilli of typhoid fever and other pathogenic germs do; or, in other words, there may be true infection.

Since it has been found that some of the bacterial poisons are destroyed by a temperature approaching that of boiling water, it has been assumed by some that this is universally true, and that cooked meat or boiled milk cannot be poisonous, or if so, they cannot owe their poisonous properties to these bacterial bodies. This is an assumption which we are not at present justified in making. Certainly some of the bacterial proteids can be kept for ten or fifteen minutes at 100° C., and for a much longer time at 80° C., without being destroyed. I have isolated one of these proteids, which may be dried at 100° C. to a constant weight without any appreciable decrease of toxicity, and in solution it may be kept for half an hour at 80° C. with no effect. However, prolonged heat renders it inert. I believe that cooking meat or milk lessens the danger of poisoning by them, but it does not do away with that danger altogether.

I have met with poisonous foods in which I have been unable to find either poisonous bases or proteid bodies. Two years ago I was called upon to investigate some mincemeat which, it was claimed, had seriously affected a number of persons. Some of the meat was fed to cats and dogs, and invariably produced in them vomiting and purging. This was equally true whether the meat was given raw or cooked. Notwithstanding this positive evidence of the poisonous character of the food, I was unable to determine the nature of its active constituent. It was tested in the most thorough manner for inorganic poisons, for alkaloidal poisons and for proteid poisons, but with wholly negative results. Furthermore, plate cultures were made, and the isolated germs were fed to and injected into animals without effect. It is possible that the poisonous constituent was destroyed by the manipulations resorted to in the attempt to isolate it. This supposition is probably warranted by the experience of Tizzoni and Cattani, who found that the poisonous proteid of cultures of their tetanus germ is rendered inert by the action of strong alcohol.

Among the foods which frequently produce untoward symptoms are milk and its products. I took the ground some years ago, that the severer forms of the acute summer diarrhœas of children are due to milk poisoning, and I think that the majority of the members of our profession are now convinced of the truth of this belief. When children must be fed upon the milk of the cow, every precaution should be taken to prevent the infection of this milk with poison-producing bacteria, and when there is any doubt, the milk should be sterilized. I also claimed, at a time when the majority of bacteriologists believed that a specific germ for these diseases would be found, that the poisons were generated in the milk by saprophytic bacteria, and that any one of a number of germs might be, in a given case, the source of the trouble. This point is also now admitted to be true.

I have shown that cheese may contain a poisonous base, tyrotoxicon, or poisonous proteids. If we expect to find every sample of poisonous cheese containing the same active constituent, we will be disappointed. Indeed, it is, with our present knowledge of the manner in which these poisons are formed, highly unscientific for us to expect to find one poison responsible for the effects which follow the eating of all the different samples of poisonous cheese. We must remember that these poisons are due to a variety of species of germs, and that the chemical nature of the product will not only vary with the species producing it, but with the stage of putrefaction. Indeed, it is altogether possible that different parts of the same cheese may contain colonies of wholly distinct germs, and consequently different poisons. It certainly is a fact that one portion of a cheese may be poisonous and other portions not poisonous. I have seen samples of cheese, the outer portions of which could be eaten with impunity, while the inner portions are highly poisonous both to man and the lower animals. Ehrhart has reported a remarkable instance of this kind.

The method of making cheese is especially favorable for the collection of a large number and variety of saprophytic germs. The milk is brought to the factory by the farmers of the neighborhood. There is, in the majority of instances, no intelligent inspection of the cows. Some of the milk cans are properly scalded and aired, while there is always the probability that others are not. The milking may be done in filthy stalls, with dirty hands, from unclean udders and, possibly, into pails which have not received proper care. Then, I believe that there is no community in which the standard of honesty absolutely prohibits every milkman from diluting the lacteal fluid, and sterilized water is not usually used for this purpose. Moreover, the cheesemaker is not always duly appreciative of cleanliness about the factory and in the manipulations to which the milk is subjected. We need some bacteriologist who will do for the manufacturers of cheese what Pasteur has done for the brewers. The ripening of cheese is due to the growth of germs, and a good cheese could not be made without the help of these industrious little workers. The flavor and value of one cheese differs from another according to the kind of germ which takes part in the making of the cheese. The milk brought in from the various farms should be sterilized, and then inoculated with pure cultures of the desired germs and moulds. A plan like this will be adopted some time, and when it is carried out intelligently, poisonous cheese will not be made. Moreover, the flavor and digestibility of the cheese made will be greatly improved. At present, the bacterial flora of the cheese, which we eat, is dependent wholly upon accident. It is probably well that we are not, as we take our coffee and cheese, acquainted with all the varieties of microscopic vegetable life which we are masticating, and which have been gathered from the barnyards of the milkmen.

The treatment of poisoning from cheese is not very difficult. The poisons act so energetically upon the stomach and intestines that relief is generally secured by the vomiting and purging. The most dangerous cases are those in which these symptoms do not occur. In these instances, vomiting should be induced, and the bowels should be washed out thoroughly. At the same time any weakness of the heart should demand the hypodermatic use of digitaline or strychnine, or both.

The preceding remarks apply with greater force to poisoning with canned salmon, lobster, etc. In these cases, as a rule, there is no purging. The pain in the bowels is often very severe, but generally constipation is an accompaniment. With the appearance of the symptoms, the *materies morbi* is in the alimentary canal, and the aim of the physician should be to remove this before absorption can take place. The treatment must be prompt. The administration of antipyretics is, so far as I have observed, useless.

If the absorption of the poison is not prevented, and the patient passes into a condition of stupor, the chances of recovery, in case of poisoning with foods infected with toxicogenic saprophytic germs, are small.

In cases of milk poisoning in infants (or cholera infantum) the discontinuance of the milk is now generally insisted upon, and its practice has decreased the mortality markedly. Even sterilized milk should not be allowed at this time, because it so soon becomes infected in the intestine. The germs which cause the acute summer diarrhœas of infancy grow most rapidly and produce their most active poisons in milk, therefore it should be an invariable rule to prohibit absolutely the use of this food during treatment. This prohibition is the most important part of the treatment. Every case of cholera infantum is a case of food poisoning and should be treated as such.

The infection of meat and milk outside the body with specific pathogenic bacteria is so well known to occur that I will scarcely more than mention it. The frequency with which typhoid fever, diphtheria and other infectious diseases are disseminated by the use of infected milk is shown in the current record of medical literature. Milk has been diluted with water containing the germs of typhoid fever, and the prevalence of the disease may mark the daily rounds of the milk man. Dr. E. P. Christian, of Wyandotte, sent me in 1890, a sample of milk, and one of water from the well of the milk man. In both of these I found a germ which is toxicogenic to the lower animals, and which is more fatal than the Eberth germ. Dr. Christian had learned that the different families, in which he had patients sick with typhoid fever, obtained their milk from this man.

It is unnecessary for me to dwell on this point since all agree that the infection of these foods outside the body with specific pathogenic germs frequently occurs and is accountable for certain epidemics.

The question concerning the transmission of tuberculosis from cows to man through the eating of the flesh or the drinking of the milk of the former by the latter, is one of great practical interest. I shall not in this paper, however, enter into any detailed discussion of this part of my subject. I will content myself with a statement of the following propositions:

1. The flesh of a tuberculous cow, even when the disease is localized in the lungs, should not be eaten by man.
2. When the tuberculosis is general, there is danger of specific infection through the eating of the flesh or the drinking of the milk.
3. When there is tuberculosis of the udders the specific infection may be transmitted through the milk.
4. That infection with tuberculosis through the intestines may occur has been fully demonstrated by feeding healthy animals with tuberculous tissue, with infected milk and with pure cultures of the germs.
5. Infection by the way of the intestines is most common in childhood, at a time when cow's milk is used more abundantly than at any other period of life. This is shown by the larger number of instances of intestinal and mesenteric tuberculosis as a primary disease, among children than among adults. However, I do not believe that any large per cent. of the total cases of tuberculosis at all ages, is due to the eating of infected foods. In by far the greater number of these cases the pulmonary tuberculosis is the primary disease and the intestinal involvement is secondary, and there is no evidence that the tubercle bacilli pass through the walls of the intestine, through the lacteals and so on to the lungs without giving rise to any lesions before reaching the pulmonary tissue. That infection occurs occasionally through the lymphatics we have stated, but in such instances there are pathological evidences of the route taken by the infecting agent, and the pulmonary involvement is secondary. At present the weight of evidence favors the belief that all cases of tuberculosis in which the primary trouble is in the lung, are due to infection through inhalation; while those cases, in which the primary lesion occurs in any other portion of the body, are most probably due to infection by way of the intestines.

There are other diseases which may be transmitted from the lower animals to man by the eating of the flesh of the former by the latter, but they will not be discussed at this time.

HOW A GENERAL PRACTITIONER MAY TREAT ATROPHIC RHINITIS.

Read before the Kansas State Medical Society, at Fort Scott, May 4, 1891.

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Mr. President and Gentlemen of the Kansas State Medical Society: It is indeed difficult for one whose time is so fully occupied with the practice of a specialty, limited as is the one I represent, to prepare a paper which will afford scope for discussion in a society of general practitioners.

Atrophic rhinitis under its proper name, or under that of its principal symptom, ozæna, is a subject too extensively and thoroughly treated of in text-books and in general literature to make any complete review of it either instructive or interesting.

It is, therefore, only my purpose here to record personal views upon some points concerning which there has been, and still is considerable controversy and difference of opinion.

Ozæna being now generally discarded as a distinctive name of any pathological process, is regarded as the principal symptom of several; yet the ozæna which attends the formation and retention of crusts in the nasal fossa affected by typical *non-ulcerative atrophic* rhinitis, is an odor perfectly distinct from that attending any other form of decomposition either in or outside the nose.

Syphilitic ozæna, or the ozæna of carious intranasal bone, and the ozæna from a foreign body in the nose, are both distinct in character from it. It has been stated that this odor is present where an atrophy exists. (Mackenzie, Gottstein.)

These instances are of very great rarity, and as the interior of the nose, especially where hypertrophy is present, cannot be thoroughly inspected in all its parts even with the best illumination, it is impossible to exclude the existence of atrophied glands and an altered epithelium. Such cases are, I believe, the beginning of the change from hypertrophy to atrophy, and one or two instances have come under my observation.

Rather more frequently we find atrophic rhinitis without either crusts or odor, especially in people beyond 45. It is impossible to say whether these cases have run their whole course without them, but although no such history is obtainable in some of the cases, it is probable that they were present in some degree at an earlier age. In other words, these are cases in which nature has cured the ozæna and left apparently unchanged the pathological process on which the symptoms depended.

The statement that the peculiar smell of ozæna may exist without the presence of retained secretions, should certainly be received with great reserve. Personally, I have never seen such a case, and I am inclined to believe those reported were cases in which crusts were from view in the accessory cavities of the nose. The intensity of the odor varies in different cases from almost nothing to a stench so offensive as to be unbearable. Nothwithstanding the fact that the disease sometimes occurs in persons of the very best general health and of irreproachable family history, it is more frequently seen in poor constitutions and with persons with a weak family record of health. The experience of other observers does confirm the assertion of Voltolini, that it occurs as frequently or more so, in the rich than the poor.

Heredity plays no *rôle* in the etiology of the disease. In one instance, however, I have seen it in three generations. In several instances I have seen it in sisters, once where both children were less than ten years of age. There is no proof, beyond such uncommon cases of coincidences, that the disease is contagious in the ordinary acceptance of the term. Voltolini says: "In my experience the disease is a woman's disease—I have observed it almost exclusively in the female sex, in some very rare instances also in boys and men, and in the latter there was still a question if there was not something else at the bottom of it."

Massei, on the other hand, says that "sex has not much influence on the development of ozæna," while Jurasz shows that in his experience it is only two or three times as frequent in women as in men. In my own experience it is certainly a rarity in the male, unless depending upon some local malformation of the septum. This is in striking contrast to hypertrophic rhinitis, which is much more frequent in men than in women.

Atrophic rhinitis being more frequent in the female, and most frequently developing at the age of puberty, while it is rarely seen after the menopause in women, it is fair to conjecture that there is some unexplained influence exercised upon the course of the disease, at least as far as the ozæna goes, by the genital apparatus. The ozæna is usually more offensive at the menstrual period than at other times. Exceptions to this are frequent, but not sufficiently so to invalidate the assertion.

Nevertheless it occurs at all ages; I have seen it in infancy and in old age. In the former, however, it must not be taken for the nasal lesions of hereditary syphilis; while atrophy may begin in adult life, ozæna rarely begins after thirty.

Some years ago Zaufal advanced the theory that ozæna was due to congenital smallness of the turbinated bones, causing an abnormal roominess of the nasal chambers, while Laubage and Tilot (quoted by Massei), on the other hand, claimed that it was caused by a congenital narrowing of the nasal fossæ. These statements have rather an historical than a practical interest, as they have received little support from the large numbers of contributors to the literature of the subject. Clinically, we often see atrophy in one nostril associated with abnormal roominess of the fossæ caused by extreme deviation of the septum to the other side. These cases can usually be promptly cured by correcting the deviation of the septum. Michel and others have stated that many cases of atrophic rhinitis are caused by a suppurative inflammation of the accessory sinuses. It is true that these conditions may co-exist in rare instances, and it often happens that suppuration of these cavities is mistaken by careless and inexperienced observers for the ozæna of atrophic rhinitis. There is little evidence that either of these affections has any causative relation to the other. It is generally agreed at present that syphilis, either congenital or acquired, has nothing to do with non-ulcerative atrophic rhinitis, while struma, with which Stoerk connected the disease, has no definite meaning in modern pathology. It is probable, however, that atrophic rhinitis may be congenital, as it is occasionally, though very rarely seen in an advanced stage in young infants. There is no connection between tuberculosis, either localized or general, and atrophic rhinitis, and it is my impression that phthisical patients do not furnish their quota of ozæna. The suggestion was lately advanced by Spencer Watson, that atrophic rhinitis is the analogue on a mucous surface of lupus erythematous on the skin. Another London authority (Woakes) explains its etiology by supposing it to be due to some pathological state of the vaso-motor nerves. These are certainly curious and interesting theories, but belong almost entirely to the realm of speculation, having no clinical or pathological proof. It is still a hotly debated question as to whether atrophic rhinitis is a disease by itself, commencing *de novo*, or whether it is the later stage of hypertrophy.

Bosworth claims that in the early stages, usually in childhood, these cases suffer from suppurative rhinitis. As time goes on, the elements of the mucous membrane become altered in structure, and atrophy, both of the investing and glandular epithelium occurs, crusts form, and their contractions, as they dry on the surface of the turbinated bodies, exert pressure which causes the extreme atrophy. This is certainly a very attractive and simple theory, and if the premises are once granted, it appeals strongly to reason. In my experience and in that of many others, chronic purulent rhinitis is a rare affection, both in adults and in children, unless dependent upon syphilis, a foreign body, suppuration of the accessory cavities or upon a marked general enfeeblement of body due to the presence of some chronic malady, such as tuberculosis in some of its many forms. The only clinical indication which would point to that origin of the disease which I recall is that occasionally in well developed cases of atrophic rhinitis, a history can be obtained that the nasal secretion at first was abundant and came away freely. I remember a few cases of chronic purulent rhinitis in the adult; whether they went on to atrophy I am unable to say. Nevertheless, it seems highly probable that atrophy should follow such cases, but their great rarity in children fails to account for the comparative frequency of ozæna in adolescence. The contrasting pressure of the dried crusts will hardly explain the atrophy because there must have been great and important alterations in the mucous membrane which produced this abnormal viscidity of the mucus, which prevented its flowing from the nose. That atrophy causes the crusts and the crusts cause the atrophy, is not entirely satisfactory to the inquiring mind. Contrary to Bosworth's remark, that the epithelial structures are apt to be involved in pathological changes in the mucous membranes in youth, it is universally admitted that these changes, benign as well as malignant epithelial growths, belong at least to mature adult life. The tendency to atrophic changes in all tissues of the body belongs to late adult life, not to adolescence. Hypertrophy is most frequent before middle life, but also, at least in the nasal mucous membrane, after adolescence. It certainly, therefore, seems to me that the facts do not fit with Dr. Bosworth's theory. It is the belief of perhaps the plurality of the observers, that atrophic rhinitis is the latter stage of the preëxisting hypertrophy; while this is not an entirely satisfactory view, it seems to me to coincide better with clinical observation and our knowledge of analogous pathological changes elsewhere, as in chronic inflammation of the internal organs. If it is true that atrophic rhinitis begins as such, the only analogy we have to it is the atrophy which follows nerve degeneration, a thought which may be of some comfort to many of us. Hypertrophic rhinitis, while not rare, is not a common affection in children. If we are to suppose that this, as well as other inflammations, simple, catarrhal or suppurative, end in atrophy, we must acknowledge some unknown biological factor which makes that change very much more common about the time of puberty in females. In a few cases, I have been able to notice this change from hypertrophy to atrophy. These two conditions may coëxist in the same nostril; atrophy of the inferior and hypertrophy of the middle turbinated bone called by Woakes "necrosing ethmoiditis" is not frequently observed in connection with atrophy of the inferior turbinated bone. A furrow traverses longitudinally the middle turbinated bone, dividing it into halves. Pus is seen to exude from this furrow and from the ethmoid cells. There is, however, no carious bone.

Occasionally advanced atrophy may be observed in one nostril and marked hypertrophy in the other. I have yet to see a case in which one nostril is occluded by crusts and the other is secreting abundant fluid, muco-purulent matter. It is impossible to deny that atrophy of the mucous membrane may begin *de novo* in rare cases. Almost everything is possible in pathological processes, at least our comprehension of the laws that govern them is too feeble to make us dogmatic about any of them. At present rules and theories in medicine are for the slowly disappearing didactic lecturer, rather than for the clinical instructor. Explaining the cause of atrophic rhinitis, it is probable that this prophecy will remain unfulfilled; on the other hand, it seems to me exceedingly probable that sooner or later all will agree that ozæna proper, the characteristic odor of the secretions, is caused by the presence of microörganisms. There are many bacteria which growing on ordinary culture media, give off a faint odor which is not unlike that of ozæna. Until, however, a microörganism is constantly demonstrated in the superficial layers of the atrophic mucous membrane, and it is shown that inoculations produce the disease, we must be satisfied with believing that microörganisms are responsible only for the characteristic odor of the altered secretions of atrophic rhinitis, in which they find a suitable medium for their growth. It is probable, from what has thus far been reported, that several microbes are capable of producing the odor when growing in the secretions. It is probable that the symptoms of atrophic rhinitis are self-limiting, that after a longer or shorter time, extending over years, these patients are relieved of their suffering and terrible affliction. Otherwise we should see more cases after forty years of age than we do. It is not reasonable to suppose that regeneration of the constituent parts of the mucous membrane takes place at an age when the tendency of other organs and tissues is towards atrophy and retrogression of function; but the question has often arisen in my mind, what becomes of these cases?

If they don't get well they must die, for it is not a disease, the symptoms of which can be disregarded. The number cured by any medicinal means must be very insignificant. The patient, after anosmia has become complete, may be reconciled to his own condition; not so with his friends, and he would inevitably be driven to the doctor's office; yet it is the great exception to see a case after thirty-five years of age. Possibly these cases may be cured by the suppression of secretion altogether from the complete atrophy of the mucous membrane, and, there being no more secretions to decompose, the odor and crusts both disappear. Clinical experience, however, induces me to regard this suggestion as very improbable. Contrary to the generally received belief, this disease is fully as amenable to treatment as any chronic affection of any kind not curable by surgical means. It is almost universally good in patients under the age of thirty. From thirty to forty they may expect a fair amount of permanent relief, after forty-five treatment probably has no effect in hastening nature's cure, but great temporary relief may be given by the thorough cleansing of the nasal fossæ at regular intervals. After such positive assertions as the above, it is necessary to qualify them by saying that I am convinced of their truth provided the patient and his adviser do not expect miracles and are willing to work faithfully, persistently, and intelligently for the desired result. It is impossible to understand how any one with any knowledge of nature's laws obtainable in even the crudest medical education should expect to arrest and turn back to a normal condition in a few weeks a process which has advanced slowly for years.

One should never be led away by the glowing accounts of brilliant cures from a few applications of some lauded agent. One can always be sure that the explanation is a faulty observer, a mistaken diagnosis, or a vivid imagination. Neither clinical experience nor pathological knowledge should lead us to expect any such results, and they do not ensue upon any plan of treatment that does not extend over a long period of time. Observers whose names carry weight in the laryngological world make no such claims where a cure is affected after many months; it is even then not a question of the restoration of the diseased tissue to its normal anatomical structure; it is simply a stimulation of the remaining glands, epithelium, and blood vessels to do the work of their dead and gone cogeners. It is a symptomatic cure and not an anatomical one. Some one has said that a mucous membrane once inflamed, however slightly, never returns to its normal condition. The hyperbole of this statement makes it a little ridiculous without the definition of what constitutes a normal mucous membrane, but when atrophy has once occurred the declaration is literally true. This, however, is a part of the result which does not particularly interest the patient. For him the disease is made up of his terrible symptoms (bad odor), and the abolition of these will entirely satisfy him. As to the length of time it will take to do this, that is always a matter of many months, but will depend largely upon the length of time the affection has existed, upon the extent of the pathological changes in the mucous membrane, and upon the general health, age, and natural recuperative power of the patient. This last factor is always an unknown but a very important one, which can be ascertained only after treatment has commenced. Tke instances of quick cure of the symptoms of atrophic rhinitis referred to above, where not existing in the imaginations only of those reporting them, are those cases where advanced atrophy is not present, where the majority of the secreting glands still preserve enough vitality to resume work promptly when once their mouths are freed from the obstruction of crusts. As a rule those cases fall first into the hands of their family physician. How then can the general practitioner treat the disease?

The first thing to be done in starting to treat a case of advanced atrophic rhinitis is to give the patients thoroughly to understand what they are to expect. They must be told that the treatment must extend over a period varying from six months to a year, possibly over a year and a half. From four to eight months it will be necessary that they should come regularly to the physician every other day; after that once a week. The nose must be cleansed in the intervals at home as thoroughly as possible several times a day. Unless they will consent to be thus faithful and persistent, it is better that they should not begin treatment at all, as the result will be a disappointment to the patient and a loss of prestige to the physician. If this plan is adhered to you can assure them that in a few weeks they will be greatly relieved of their sufferings, after six months will have attained some permanent benefit; while in a year's time the nose will be in such a condition that by moderate daily cleansing they can remain practically cured.

Of course, these figures in regard to time are not meant to be absolute, but will vary either way with each case. Unless there is perfect confidence established, and a thorough understanding of the difficulties of the case impressed on the patients, it is useless to attempt to treat them; with such relations, however, I know of no affection of the nose or throat in which more satisfactory results can be obtained, and more gratitude elicited from the patients by treatment. Their troubles are real, both of body and mind. Their afflictions are visited both on themselves and their associates. It is said that "cleanliness is next to godliness," but in the treatment of atrophic rhinitis with ozæna, cleanliness takes the lead. No treatment will be successful without the frequent and regular cleansing of the nasal fossæ. By this I mean not only the removal of the crusts, but the careful washing out of all traces of mucopurulent matter. It is needless, and would be superfluous here, to go into various methods of accomplishing this. Suffice it to say, however, that the crusts should always be removed by the gentle use of a probe protected by absorbent cotton (you can do this much better by using the palate elevator) before any fluid application is made to the nose. Oily substances especially, but also watery solutions, make the crusts more tenacious and difficult of removal. Sprays of peroxide of hydrogen transform the inside of the nose into a mass of frothy, semi-gelatinous matter, which clings to the mucous membrane with the tenacity and persistence of fresh glue. Every procedure must be attended with the greatest care, so as not to cause the patient unnecessary pain, if she is expected to return to you with the necessary regularity and persistence. After the crusts are removed, the semi-viscid secretion can best be washed out by the use of the post-nasal syringe and the compressed air apparatus, using some weak alkaline, antiseptic wash, as Seiler's dissolved tablets, or Leffert's formula. Those cases in which the atrophy and crusts are principally found in the deeper parts of the nasal chambers, while some hypertrophy, or a less degree of atrophy, exists anteriorly, are particularly hard to cleanse properly, and the comparative anterior obstruction increases the disposition to the retention of the secretions when they form again after the cleansing. These cases are not infrequently met with. The nasal fossæ once thoroughly cleansed, we must now select some method of stimulation to the mucous membrane. The operator's mind must be disabused of any impression that there is any such thing as a specific agent for this purpose. Stimulation here means irritation. This must be gradually increased in strength until the limit of tolerance of the patient is reached, for after a time she will be able to bear with comfort, degrees of local irritation which it would have been impossible to use at first. The forms of irritation are three: Mechanical, electrical, and medicinal or chemical. Mechanical: Gottstein's tampons, massage. Electrical: 1. Galvanism. 2. Galvano-cautery at a dull red heat. The multitude of drugs used for this purpose is not exhausted by the following list: Thymol, menthol, aristol, iodol, salol, ichthyol, eucalyptol, carbolic acid, trichloracetic acid, salicylic acid, tar water, resorcinal, iodoform, red gum, sanguinaria powder, nitrate of silver in powder and solution, bichloride of mercury, capsicum, sulphurated waters, iodine and its compounds. All these substances have been urged as of great efficiency in the treatment of atrophic rhinitis. In order to obtain good results, however, the cleansing must be thorough, frequent and regular. This done, good results may be obtained with anything as a subsequent application. The powders used as such, which are insoluble in the nasal secretions, act beneficially probably only by the mechanical irritation they cause. Those antiseptics are best which do not coagulate the secretions. Those which have toxic power it is necessary, of course, to use with great caution. Gottstein's tampons of antiseptic absorbent cotton also stimulate the watery secretions of the nose, but are apt to cause headache. Nevertheless, in some cases they are efficacious. Menthol has a tendency to cause contraction of the blood-vessels at first, and thus prevents transudation. Aristol I use in powder. Albolene and benzonal I also have my patients use; it is albolene with the acme vaseline spray, three times a day. I believe it is entirely inert except for some slight mechanical irritation. It certainly has a tendency to overcome the dreadful odor which accompanies these cases. Thymol I have used for several years and its advantages are: it is a good antiseptic; it has a pleasant odor; it is sufficiently soluble for sprays and douches; it stimulates the mucous membrane and causes a profuse watery secretion; it is not poisonous and has no constitutional effect; it has no vascular constringing power. I have my patients use the formula recommended by Seirs:

Thymol, grs. ss.
Alcohol
Glycerine, āā ʒjss.
Aquæ, ℥j.

It is convenient to make use of the stronger formula, and to dilute it at first and gradually increase it again to full strength. A fine spray with a pressure of twenty pounds is the best method of applying it. Occasionally even the weak solution causes pain at first. The general practitioner may use a solution of thymol, grs. iss to albolene in the acme atomizer daily with great advantage. Much stronger solutions can be used with the oils than with water, but they stimulate much less, and the best results are attained by the latter. This process of cleansing the nasal fossæ and the stimulation of the mucous membrane must be repeated every other day for many months, and then, as it is found that the patient is able to keep it clean in the intervals at home, those intervals may be lengthened to twice or once a week, and once in two weeks. It is necessary that the patient use a cleansing solution at home. Seiler's tablets or the Dobell solution may be used by means of syringe, spray, or douche cup. The latter is the best. An ordinary feeding cup, such as is used for bed-ridden invalids, with a long slender spout, may be used to flood the nose several times daily, using large quantities of the fluid each time, and blowing the nose forcibly in order to dislodge all the secretion possible. A few puffs from one of the vaporizers of albolene with thymol may then be used in each nostril to obtain gentle stimulation. The danger of middle ear trouble, in these cases, from syringing or spraying is practically *nil*, because the fossæ are usually so roomy that there is no obstruction to the return flow, and the inflow depending entirely upon gravity, no pressure can be exerted upon the mouths of the Eustachian tubes. In many cases it will be noticed that there are constant places on the nasal mucous membrane where secretions are especially apt to lodge and cling. These areas may be large or small. The application of a solution of nitrate of silver ʒi to ʒi on cotton, may be made from time to time to these places. A few applications will frequently prevent the further obstinate clinging of the secretions at this spot. The first thorough cleansing of the nose will be more difficult and painful than any subsequent one if the patient return at frequent and regular intervals. After a month or six weeks it will usually be noticed that the dried secretions are less abundant and cling less tenaciously. The patient will also say that the discharge from the nose has greatly increased. This is because the secretion is becoming more fluid and is consequently expelled before it dries. There will be periods over several weeks when the disease seems practically unchanged for the better, but this is sure to be followed by another period of great improvement. Gradually it will be seen that the nose has fewer and fewer crusts in it, the odor becomes gradually less and less strong, and the intervals during which it is absent altogether become longer and longer. The headaches disappear, and in some cases these signs of local improvement are accompanied by a corresponding improvement in the general health. When the patient is able to go for a week or ten days without help in cleansing her nose, and without a return of the odor or other symptoms, we may conclude that some permanent benefit has been attained. The case should not be dismissed, however, until the mucous membrane is seen to be constantly moist, pink, and free from dried secretions. When the general health is poor, tonics, exercise in the open air, a full diet, careful attention to digestion and the condition of the bowels is always demanded. Indeed, even in those cases where the general health seems perfect, fresh air and plenty of it, with more or less vigorous exercise must be insisted upon where they are possibilities. These patients even in moderately good health often do better locally when taking cod-liver oil or cream or iron. As a rule these troublesome cases present themselves to the general practitioner first. If you do not care to treat them, do not tell them, I pray you, that their case is beyond assistance. Assist those of us who are trying to take this branch of our noble profession out of the hands of impostors; encourage your patients; time and strict attention to details will cure every single case.

Cod-liver Oil in Lupus Vulgaris.—A woman, 33 years of age, had a patch of lupus vulgaris on the left cheek, which was cured by the scraping method. The right cheek then became similarly affected. Iodoform was used, but with no success (*Rev. gén. de clin. et de thérap.*, No. 3, 1892). M. Zilgien then applied the following dressing. He dipped a band of iodoform gauze into cod-liver oil and alternated this dressing daily with simple iodoform powder. Wherever the oil was applied, rapid cicatrization took place.

INFANT FEEDING.

Lecture delivered in the Fourth Special Course of the Chicago Policlinic,

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What I propose to give you to-day will be probably more in the nature of suggestion than instruction. I may possibly be rather more iconoclastic than constructive, but I wish to take into consideration certain of the principles which underlie the subject of infant feeding, rather than all the details which go to make up successful work in that direction.

We find it stated that human milk is the best food for the infant; we find it further stated, and generally accepted, that in the absence of human milk that food which most closely resembles mother's milk in its chemical and physical properties is the best for the infant. Now I wish to deny this latter statement, and it is rather difficult to show cause for the denial, for a lie that is partly true is the hardest of all to down. It is unquestionably true that mother's milk is by all odds the best food for the *healthy* infant. Let us get that word healthy well fixed in our minds. That it should be made the guide in the formation of any artificial food for the healthy infant is likewise true, but that it should be followed absolutely, that we should bow down to it exactly and never vary from it even in the slightest particular, is not true. It is not true, for instance, that we must have a milk which shall coagulate exactly as mother's milk does in order to be successful as food for a baby; it is not true we must have exactly the same proportion of the several ingredients which enter into mother's milk imitated in our artificial food. In consequence of the general conception we find that the efforts of chemists and of physicians have been directed towards imitating mother's milk as closely as possible. We are told to take the milk of goats because it resembles mother's milk more closely than does cow's milk. But it is not practical. We cannot obtain goat's milk in sufficient quantity, but we must look to cow's milk for artificial food for the child. Furthermore, goat's milk contains widely different substances from anything found in mother's milk or cow's milk, certain organic substances the nature of which we do not understand. But the presence of these is ignored completely when the quantities of proteid and sugar and fat are tolerably near those in mother's milk. Meigs has done considerable work in this direction. He prepares a food by taking certain proportions of cream, milk, water, and sugar of milk, the latter in large quantity, and makes what is known as Meigs' cream mixture, or artificial food for babies. Meigs analyzes milk in a peculiar way, differing materially from some of the best chemists in the world, and his artificial food is based on his analysis. The mixture has not proven satisfactory in my hands. And I may say here that with cream mixtures as a rule, more or less trouble will be experienced. I have had my attention called quite recently to a number of children who have been raised upon a mixture of cream and oatmeal alone, and it is strange to see what peculiarly healthy children can be produced by this mixture. That is to say, apparently healthy, for as we shall see later, they are certainly not completely nourished children.

We must throw aside then the idea that we are to imitate mother's milk.

The first rule for any food is that it must comply with the conditions met with in the intestinal canal of the particular infant in question; the food to be successful food for a baby must be suitable to the conditions found in the intestinal canal of that baby. Let us see what we mean by this. In the majority of instances when we are called upon to direct the feeding of a child artificially, that child has already had its alimentary canal disordered, it has already been tampered with and it is comparatively rare that we have an opportunity to take a new-born baby and from the start direct its feeding as we wish; it is nearly always in an abnormal condition when we take charge of it. How? There are conditions which we may call dyspepsia, if you please, diarrhœa, or what not, but in nearly every instance the child has some abnormal condition of the alimentary canal. Let us suppose that when the baby is brought to us it is having putrid stools, shall we put it at once upon a certain kind of food because it is considered the best for a baby; shall we put that baby to the breast or on food which so resembles mother's milk that it might, *a priori*, be considered the best? By no means. We must first put that alimentary canal in the best condition, and the food we adopt for the time should be the one we would prescribe for the diseased condition there present, at any other time. This is an important thing in artificial feeding, but frequently overlooked. So often the child is brought to us with the statement, "Doctor, we want you to direct the feeding of this baby; we have tried this and that food but none of them have agreed with the baby." We can't tell what food agrees with that baby, but what they have proved is that this or that food does not agree with the conditions present in the intestinal canal. Let us remember that the first condition of infant feeding is to put that child's bowels in a normal condition, and right here come in the principles I have explained in my preceding lectures, because the conditions I have there described underlie the great majority of disorders of artificially fed babies as we find them. The first thing we must do is to purify the intestinal canal of the infant, put it in a normal condition, and then we will be in a position to feed it properly. I am thoroughly convinced that the great difficulties so commonly met in finding a suitable food for a baby, result principally from overlooking this factor.

Then another thing—when we have gotten the intestinal canal of this child in a normal condition, one which is aseptic so far as the food we wish to give it is concerned, that is to say, which contains no germs which can make poisons out of the food we intend to give it, then we must consider the food to be given to that child; it must be something adapted to the physiological conditions that are present. First our selection of a food is to be guided by the pathological conditions present, next, it must be within the scope of the physiological possibilities of the healthy child. What are they? A healthy infant is not capable of digesting coarse vegetables such as cabbage; it may take them into the intestinal canal, but they are apt to produce harm; it is not capable of digesting many fruits, particularly those that have a considerable bulk to them. Of the simpler foods, meat in particular is one which it is very rarely within the power of the healthy infant to handle. Very frequently when we give beef scraped, beef tea, cooked beef, or pressed beef juice, or any other form of beef to a baby we find that the child develops more or less diarrhœa. There is no form of food which we give to children which produces the intense putridity of stools as that which we notice following the use of meat or meat preparations. So I say, that almost absolutely meat is a food which is physiologically improper for a young child. We hesitate to give meat to a young puppy or kitten because we say it will give them fits. I don't know whether any such objection lies with regard to the use of meat with young babies, but this I do know, that in many instances it is the cause of disarrangement of the bowels of a child, and we must consider that, physiologically, it is not a suitable food. The foods which the infant can digest are principally cow's milk, eggs, sugar and starch. Under the head of starch we must put cracker, bread, rice, arrow-root, baked potato and oatmeal. Now, with these foods at our disposal, for the proteids and carbo-hydrates and with cream, bacon, and cod-liver oil for the fats, we have a complete list of what we can give an infant for food. The most easily digested fat is, apparently, cod-liver oil, next is cream, next butter, and next fried bacon. We all know how readily young children will digest fried bacon. It is a means of feeding which has grown up with the people; it is in quite common use. Beyond this list we would say that other foods, more complex, are unphysiological.

To summarize: The food must first be adapted to the conditions of the intestinal canal; it must not contravene the physiological possibilities of the child. Having first by a proper dietary removed the pathological conditions, we are then to limit our food selection to the substances named, and which are within the physiological possibilities of the child.

The next condition which is relatively essential, is that the food given shall be sterile, which means that it shall be pure. Let me say pure instead of sterile because a great deal of the food given is pure enough but not sterile. All milk is contaminated with microorganisms in the act of milking and they are not taken out unless the milk is subjected to the actual process of sterilization, and as that is practically carried on, they are not taken out even then. But milk, even under such conditions, furnishes a most excellent food and does a healthy child no harm; a healthy child, understand. But it is not sterile, although it contains no germs ordinarily, which can make poisons out of the milk; it contains no germs which are pathogenetic, or which in themselves are detrimental to the child, therefore for the purpose of feeding it is pure. Let us say the second requirement is that the food shall be pure. This brings us to the subject of sterilization. Sterilized milk is valuable simply because of its purity. The principal utility of sterilized milk lies in the fact that it does not introduce poisons into the intestinal canal of the child. When the child's bowels are once in a normal state, by sterilizing the milk we maintain them in normal condition, simply by a negative process.

Sterilization as applied to the preparation of infant food, consists in subjecting the milk to a temperature approaching that of boiling water, over a period of from thirty to sixty minutes, and after having subjected it to the temperature in preventing further contamination by keeping the air from it. This is the ordinary process involved in sterilizing milk, and it has been shown conclusively that this process does not destroy all life in the milk; it probably destroys all adult microörganisms, but the spores are not killed, and to actually sterilize milk in this manner, it would be necessary to repeat the process twice at intervals of twenty-four hours. But the milk which we feed to children and call sterilized milk, is not sterilized, it is only grossly purified. We must not delude ourselves with the idea that it is actually sterile. Furthermore it is highly improbable that such a thing is desirable. We know that the healthy intestines swarm with microorganisms and if the milk is sterile when it enters, it is but a moment until it is far from sterile, but the organisms which grow in it under such conditions so far as known are of a harmless type, and it is quite immaterial how many microörganisms are growing in the intestine at the time of its lodgment there.

We find not infrequently that children who have been fed upon foods most closely resembling human milk will not thrive, but when put upon sterilized milk they do thrive. Yet the latter may be very gross imitation of human milk and very far from maintaining the exact proportions of human milk, while the other is prepared carefully to have just so much casein, so much fat, so much carbo-hydrate and so much water, and perhaps has been partially peptonized, so that when the casein coagulates it coagulates in flakes and even looks like mother's milk in color. Upon the one food the baby thrives, upon the other it dies, and the difference in results lies solely in the fact that sterilized milk is free from poison. But if we put sterilized milk into a poison-producing bowel, we might as well put in the poison itself, for sterilized milk can then be of no use.

The third condition which a food should meet is that it shall contain the necessary ingredients for complete nutrition. Now here is a most important problem to me; it is the prettiest point in the whole subject of infant feeding. What are the ingredients necessary to complete nutrition? Let us take for our guidance mother's milk. We know that healthy babies are raised upon mother's milk and we have every reason to believe that it is the best food which can be given to the child, because in the majority of instances children raised exclusively at the breast are the strongest and healthiest. Other things being equal, mother's milk is the type of food so far as this one feature of the problem is concerned.

What are the essential ingredients of a complete food for the child? We ought to be able to find our answer in an examination of mother's milk, and yet the method of examination applied has been found to be decidedly incomplete, and we have found that the chemical examination of mother's milk has not always told us what we are to look for. The analysis of mother's milk shows us that this substance is made up of fat, carbohydrates in the shape of milk sugar, proteids in the shape of casein and coagulable albumin, and water. These several substances exist in quite constant proportions, and it is perfectly justifiable to assume that these proportions are the best for the nourishment of the child. Comparing the analysis of milk with the dietary of the adult, it is shown that the infant requires these several classes of food in very different proportion from that found necessary for the adult. For instance, a baby does not require anything like as great a percentage of carbo-hydrates as the adult does; it requires about the same percentage of proteids, and a very much higher proportion of fat. A child a year and a half old requires about three-fourths as much fat in twenty-four hours as a full grown adult, to meet the requirements of its nutrition. This is a point we want to keep before us constantly. Growing bone needs fat to make its nutrition complete, and that is one reason why the baby requires so much actual fat to make up this condition. Now we not only require that these substances shall be present but that they shall be present in the proper proportions, and these are the proportions found in mother's milk. But chemical analysis has not yet yielded us all the secrets of mother's milk for there is at least one other element present, which we do not know chemically, and this is a substance which the English have called the anti-scorbutic element. What is it? In the days when sailors went on long sailing voyages and could not take with them animals to kill, or fresh fruit and vegetables, and consequently were deprived of these fresh substances for long periods, they developed the peculiar condition known as scurvy or scorbutus. If, however, they were given in time fresh meat or vegetables or were given fresh milk they soon got over the scurvy. This as yet chemically unknown substance, the absence of which permits scurvy to develop, is found in fresh milk. The anti-scorbutic element therefore, is to be regarded as one of the important elements of an infant food, but not, as I shall show you later, one which is always essential. One of the most interesting cases of scurvy I ever saw was in Chicago, in a child whose food made it almost necessary that it should have scurvy. It was firmly held that everything that child should receive must be sterile, its milk was sterilized, the Imperial Granum mixed with water with which it was fed was sterilized, everything indeed that the child fed upon was sterilized, and in the process of sterilization this wonderful antiscorbutic element was killed. The child was given plenty of food in every way except this antiscorbutic element, and it developed an attack of scurvy and almost lost its life in consequence.

Remember that the mere chemical constituents of any food are but grossly the index to its food value. We cannot reach the full requirements of food stuff by any chemical examination, nor by any means except actual trial tell whether or not a given food is sufficient for a given organism.

If the mother has scurvy, her offspring will have scurvy; if she is cured, her child nursing at the breast is also cured. A female, then, who contains the antiscorbutic element, can transmit this to her milk, and this is done by the healthy human being and by the healthy cow, so a healthy milk will contain the antiscorbutic element, and furthermore, raw milk contains it, while it is destroyed in the process of sterilization, in the process of condensing, in the process of drying, so that every food we have which contains sterilized milk, or condensed milk or dried milk, is necessarily deficient in the antiscorbutic element.

A great many of the so-called infant foods in the market are deficient in one or another ingredient, and I should hesitate to say that any of the foods containing the dried milk solids are sufficiently rich in proteid material. You can give any quantity of proteids in the way of dried milk and some babies will digest them, while they will pass through others. The dried milk solids fail to answer that physiological necessity which I made the second requirement of an infant food; they cannot be assimilated by the individual in question, although you may be giving plenty of proteid, chemically speaking. The great majority of prepared foods are deficient in fats. What is the result? A food deficient in fat produces rickets, a food deficient in proteids produces rickets, and any food that is rich in carbohydrates, simply because it is therefore relatively deficient in fats and proteids, produces rickets. If we use wheat so as to make it the basis of food we are giving more carbohydrates than mother's milk can possibly contain; if we make oatmeal the basis of food—and I have seen babies raised on simply oatmeal mush and cream, not another article of food given them—we are giving the child a deficiency, I won't say of fat, because the cream will in all probability make up for the fat, but a deficiency of proteids; there is not enough material to make tissue, and what is made is necessarily a degenerate, unphysiological tissue. They used to tell us that a person who drank beer was pussy and bloated and did not have good fat, but it always appeared to me that fat was fat, and whether the individual got his fat from drinking beer or eating sugar, it was all the same. But this assumption is certainly incorrect. An individual who gets his fat in one way is different from one who gets it in another way; there is a healthy fat and an unhealthy fat. You take a fat baby, and that baby may be thoroughly rachitic, it may be suffering from fat starvation. The negroes in the South on the sugar plantations ate largely of sugar, sucked the sugar cane and became decidedly roly poly; they abounded in fat, fat formed in every part of their anatomy where it could form, and yet they were thoroughly rachitic. We can give a baby a prepared carbohydrate food, or we can give it an excess of arrowroot, an excess of oatmeal, an excess of bread or crackers or starch of any kind, and that baby will get fat, because we know it is a rule that carbohydrates, sugar and starch, if they be in excess, are transformed into fat, and furthermore we know that if an excess of proteid material be given to an individual, it is transformed into fat. This is true of children and adults as well. But fat so made is not valuable for the nutrition of the growing child; I cannot explain to you why, but it is unquestionably true. That child, then, needs fat as such; it must receive the fat in the shape of fat, or it is of no use to it. The fat which forms on its body cannot be utilized by it in the same way as fat received by it in the shape of cream or butter, or cod-liver oil; that is the reason we take a fat baby with rickets and give it cod-liver oil, cream, or any other fat the peculiar circumstances shall dictate to us. The fat laid up on the baby is not fat which that baby can use for the purpose of making bone tissue, but the fat which it takes, in the shape of cod-liver oil, the food which is fat at the time it is taken, it can use in the manufacture of bone tissue, it can use in the development of that nutrition which is necessary to prevent rickets. What is rickets? Rickets is a disease of innutrition, therefore it is properly considered by us when speaking of infant feeding. It is the result of a vicious process of feeding, a process which does not supply a complete nutrition; it follows the use of foods which do not contain all of the ingredients in their proper proportion that we have mentioned to you. Rickets may be defined as a form of innutrition characterized by certain neuroses, viz.: sweating, particularly about the head, restlessness at night, and convulsive manifestations, particularly laryngismus stridulus, and general convulsions; by delayed dentition, and finally by the occurrence of certain bony deformities.

The bone changes are late, and we don't want to wait to make a diagnosis of rickets until after the bone changes have come on; we don't want to make a diagnosis of a cyclone after the houses are all torn down. And so it is with rickets; anybody can make a diagnosis of rickets after it has swept over the baby and left him with bandy legs and big head, but we want to make the diagnosis of rickets before the bone changes are apparent. Rickets is a disease not so much of malnutrition as of innutrition, it is a disease which arises because the complete nutrition which the child needs has not been given to it; usually it is a case of fat starvation, but it may be a case of proteid starvation. Rickets, then, is a starvation disease, and the rational treatment of rickets is to supply the proteid, to supply the fat which has been lacking in a given case. Scurvy is likewise a disease of innutrition, but for it to be produced there must specially be withheld from the child that single mysterious, unknown antiscorbutic element which is present in fresh meat, which is present in fresh milk and fresh vegetables. We don't know what it is, but it exists, and we know how to keep it away and how to supply it. If we keep this element away we are liable to get scurvy, and scurvy in its early stage is indistinguishable from rickets. The babies sweat, they have pain in the limbs resembling rheumatism; in some instances an area of hyperæsthesia which is said to be characteristic of rickets, but which I believe is never characteristic of rickets, but always of scurvy. The acute rickets of the Germans is probably the scurvy of the English. I remember a case which was called rheumatism. in a baby about eight months of age, and as I look back on that case now I am satisfied that it was scurvy. I believe that scurvy is classed not infrequently as cerebro-spinal meningitis because of the hyperæsthesia present. If we make a diagnosis of cerebro-spinal meningitis simply because hyperæsthesia is present we are careless. Let us go back and see what the nutrition has been, and whether it has been such as might possibly lead to scorbutic disease. We are rather comprehensive when we say that the lack of fat or proteid will produce rickets. I would like to prophecy that the disease which we now call rickets, we shall be able hereafter to classify into several diseases of innutrition. Besides those forms of innutrition that are so positively distinct that we are able to make a definite diagnosis of rickets or scurvy, we have various peculiar manifestations evidently due to incomplete nutrition, but not to be classified with certainty with either rickets or scurvy.

We have a great number of starvation neuroses; they may present themselves as incontinence of urine, or in the shape of epilepsy or hysteria; they may come in the shape of any of the vast class of neuroses, and yet be starvation neuroses; in fact, I am inclined to believe that the majority of neuroses, as we see them in infants, are starvation manifestations rather than so-called functional diseases.

A child's nutrition may fail because of failure at one or more of several points. In the first place, the food may be deficient in quality or quantity; in the next place, we may find the actual digestion incomplete, so that the child will not thoroughly digest the food, and, of course, it cannot be absorbed; or the failure may come from diminished absorptive power. Again, we may find the bulk of the food which goes through the portal vein and liver may fail to find in the elaborative organs the necessary change which it should find there to fit it for assimilation by the cells; or, having gotten the food into the circulation and ready for absorption, individual cells may not be able to take it up. The starving cell, when the food is right along side of it, may not be able to utilize it; and why? Because, with continuous starvation, its chemical constitution has been so modified that it is no longer able to directly unite with the food brought to it. This is possible—no doubt, is common—in certain cases of disease, for instance, in influenza, in which it seems to play a great rôle. Another factor is deficient cell power because of heredity. The individual inherits an abnormal cell which is incapable of maintaining its own nutrition, even in the presence of abundant food supply. That sort of heredity is common to the syphilitic baby, the tubercular baby, and possibly to the rheumatic child, or the child whose parents have Bright's disease; but certainly it is true of the syphilitic and tubercular child, that the tissues themselves are unable to assimilate the food which has been brought to them in a proper condition. Fortunately, in the case of the syphilitic child, we can so modify the structure of the cells by means of mercury that they can again assimilate. This explains why a syphilitic baby, in a state of marasmus more or less marked, does not get well upon mercury alone. It may improve for a while, but presently it stops improving; but when you add to that mercury a proper dietary, it picks up immediately. In the first place, the mercury will put the individual cells in such a condition that they can use the food brought to them; but if the food is not brought to them, all the mercury in the world can't cure the child. Furthermore, if we simply try to relieve the baby by giving the proper food while the cells are unable to assimilate the food brought to them, no matter how carefully prepared it may be or how thoroughly well it may be absorbed and elaborated, if that cell is still syphilitic, it cannot properly assimilate it, and the child goes on to a peculiar form of starvation. Now, when we put our mercury in, we modify that cell, assimilation goes on, and the child improves; so two factors become necessary in the syphilitic baby. In the case of the tubercular baby we have no such means at our disposal for cell improvement; we have no specific which will compel the cells to take up the nutrition brought to them, and it is only by indirect ways that we are able to improve the nutrition of the tubercular individual.

I have shown you the necessity of a complete food containing a large quantity of fat and of proteid material, and the necessity for purity. Now with these general principles, let us consider how we would feed a new-born baby that we had to feed artificially. If we know from the start that the child will not have the benefit of mother's milk, what shall we do? Shall we proceed without delay to feed that child? I am satisfied that during the first three days, during which the mother's milk is not secreted, and during which we normally allow the child to go unfed, a certain lack of strength ensues to that baby, and while I am perforce compelled to withhold food from the baby that is to be fed at its mother's breast until the mother's milk comes, so that we may not contaminate the intestinal canal of the child with improper germs, if I know I must feed that baby with artificial food, I proceed at once to do it. How? Always at first with sterilized milk. I should take cow's milk, and, because it is not so dilute as mother's milk. I would add to it a considerable quantity of water; I should add an equal bulk of water, thus supplying the child not only with milk and food, but with drink. The very important element of water is not to be overlooked; water is not only a food, but it is likewise an eliminant generally, and you will find that if you deprive a new-born baby of water, it will cry. I have found this cry to be not always one of thirst, but sometimes of pain. I have, in several instances, taken care to keep everything, even water, from a new-born baby. It would, after some hours, begin to cry, and on giving it water, in an hour or two the crying would cease, and shortly after it would pass urine, and I have found in these cases uric acid crystals on the diaper of the child. In all probability, these babies had uric acid infarction of the kidneys, and because they could not get water, had no means of flushing out the tubules of the kidneys, and the passage of these uric acid crystals through the kidney was what caused the pain. Two hours after drinking water they would stop crying, and we would find these crystals. Now then I would take about half water and half milk, not because mother's milk shows there shall be so much water, but to be sure that the baby shall get enough water; then I should add a small quantity of cane sugar to it, and put into each bottle one ounce of such a mixture, and I would feed that baby every two hours. It is my custom to feed them at six o'clock in the morning, at eight, at ten. at twelve, and every two hours up to ten o'clock at night, and then I stop feeding the baby, letting it cry if it wants to, all night until six o'clock the next morning, and then go on feeding it every two hours until ten o'clock at night, when I stop feeding it. When the time for feeding that baby comes around I have it awakened if it is asleep. At six o'clock I would deliberately waken that child and put it to the breast or the bottle, and try my best to make it take food. We know that the food which the child will get in this way is quite sufficient for its strength. A new-born baby may have a tendency to sleep during the day and be awake at night, but inasmuch as a baby is absolutely without habit when born, and may be made to assume any habit you choose to impose upon it, you should be careful to train it to good habits only, particularly impressing the habit of sleeping at night and being awake in the daytime. It is a little hard to get mothers to follow such directions, but it can be done nine times out of ten, and the tenth time it fails. Of course, babies are not machines, and that ten per cent. serves to separate humanity from pure mechanism. In a few days a baby will acquire the habit of waking every two hours, and it will know when ten o'clock at night comes, and will sleep all night. It is exceedingly common for mothers to break the rule and feed their babies once or twice during the night, but where I have intelligent people to deal with, I find that they can make the baby sleep all night, and it will be perfectly healthy. The great danger of too frequent feeding is prevented by this plan, and the child's stomach has the rest which it actually requires; this is true both of babies artificially fed, and of babies fed at the breast. It is a very nice thing for a mother to know that she can leave her baby at eight o'clock in the morning, go down town and get back at ten o'clock, and know that during that time the child will not need her. If she happens to *stay too long, her breasts will fill up*; they act with regularity just as the child does. I feel that I ought to speak very strongly upon this point, because you can carry it out if you will take the trouble.

Much has been written upon the manner of gauging the quantity of food which a baby should receive. Two general systems are in vogue, one in which the quantity is regulated by the age of the child, and the other, more rational, in which the quantity is determined by the weight of the child. Personally I take a different ground, and think that I meet the requirements very well. I am in the habit of allowing a baby who has been properly trained to be its own judge of what it shall receive. I cannot let a baby who has been improperly trained be the judge of what it shall receive, but when I have gotten a baby into proper habits of feeding the best I can do is to be guided by its own demands. For instance, I have had a baby under my care for about five months, a typical artificially fed baby. It was fed upon what was called sterilized milk before it came into my hands, and the milk was so sterilized that it is no wonder it was subject to considerable diarrhœa. After curing the diarrhœa and getting the bowels into normal condition, it was put upon sterilized milk every two hours. It is now receiving its milk every three hours *and as regularly as the clock strikes* the baby gets its bottle. Up to three or four weeks ago the quantity was forty ounces of milk and twenty ounces of water put into eight bottles, that is seven and a half ounces to each bottle. For a period of two months it received that quantity, and at the end of that time it began to cry after each bottle. My direction is if the child cries after it is fed a bottle of milk, pay no attention to it, it may be something accidental, but *if it cries after every bottle it gets* for two or three days, the stools being normal, and the cry not one of pain but dissatisfaction, watch the child until you are satisfied it is the cry of hunger and not of pain or anger, and a properly fed baby does not get out of temper, it will not cry like a baby fed hit or miss, but you can depend upon its statement that it is hungry. I am far enough from taking the statement of the mother that every time the child cries it is hungry, *because that is the sole interpretation* of the mother. But having found a baby that is properly fed, and which cries frequently and steadily for several days after each bottle, I don't care whether the child has been receiving the exact quantity for that age, as laid down in the books, or a greater quantity, it is not the proper quantity for that particular child. Now what do I do? This having occurred in the case under discussion, I increased the quantity of milk and decreased *the quantity* of water. Perhaps I was not wise in that particular instance—time will show—but I made up for the decrease in water by directing that the child should be given water between meals. The quantity of water that child was getting represented a much more diluted mixture than mother's milk. We cannot measure the water exactly that we give a child, but if we give the relative proportion of solids and plenty of water, whether the water is given with the food or not, we have done our part. I told the mother, in this case, to increase the milk from forty to forty-five ounces, and to decrease the water from twenty to fifteen ounces, and give the same quantity; instead of two-thirds milk and one-third water, it would be three-fourths milk and one-fourth water. A child, even on so small a quantity as five extra ounces of milk a day, will be satisfied, and so long as it is satisfied, be sure you let well enough alone. I feed this baby on sterilized milk, and nothing else. It is the food upon which I put all healthy babies at first. I told you sterilized milk was deficient in the anti-scorbutic element, so that it looks as if I were a trifle careless; but that is not so. I would be careless if I ignored that fact; I would be wrong if I did not know that fact; but when I know that the milk is deficient in the anti-scorbutic element, when I know that it does not form a complete nutrient for the child and I watch the result carefully and change with the first signs of trouble, then I am doing my full duty.

Certain observations made by Davis of Philadelphia, go to show that sterilized milk is always an incomplete nutrient for children; that children fed upon sterilized milk invariably present certain symptoms of innutrition. I don't think this is invariably true, but I am willing to admit that every baby fed exclusively upon sterilized milk is liable to show some form of innutrition, either as a distinct form of scorbutus or one or the others of the starvation neuroses. But many children do not. The majority of children, in my experience, do well on sterilized milk and the danger from its use is certainly not as great, as Davis asserts. So that it seems that many children may do well, for a long time, without the anti-scorbutic element. Now if this child goes along nicely, does not sweat about the head, is not restless at night, does not develop scurvy, does not develop painful muscles and joints, gets its teeth in regular order, has the fontanelles of the head close up at the eighteenth or nineteenth month of life, is not pallid but has a nice rosy color of the skin, and in general shows that its nutrition is perfect, I shall let the sterilized milk go on. But if the mother should come to me and say that the child's color is not just what she wants, and that for the last four or five days she has noticed that the child is not so active as formerly, doesn't seem to feel so well, doesn't take his food with a relish, then I should investigate and try to find out to what these symptoms were due. A mother will often notice a slight change which you could not possibly see. If she should call my attention to these things, I should watch and endeavor to find out whether the change was due to some pathological process, some infective disease coming on, or to innutrition, and when I satisfy myself that it was due to innutrition I would stop sterilizing the milk and give the child raw milk. In other words, I should take away the safe guard that I have in sterilization, as to bowel disorders, for the sake of preventing the child's nutrition positively failing. I want to say here that we can tell within two weeks when a child begins to fail on sterilized milk, and in two weeks more, by simply putting it on raw milk we can bring it back to a normal condition. I have done this. If we keep our eyes open, while we tread on dangerous ground in using sterilized milk, we are perfectly safe. When we put the child on raw milk we run the risk of setting up disease of the intestinal tract, but we certainly avoid a positive danger in avoiding certain forms of innutrition.

In conclusion permit me to summarize:

1. In instituting artificial feeding, the alimentary canal of the infant should first be put into normal condition, and during this period the food should be such as is adapted to the conditions in the alimentary canal, irrespective of its properties or value as a complete nutrient.

2. The alimentary canal being in normal condition, the food used should be within the physiological capabilities of the baby.

3. The food adopted should be pure, and if the conditions will permit, it should be sterilized.

4. The food intended for the complete nourishment of the infant, should contain the necessary proportions of proteids, carbo-hydrates, fats, and salts, and the composition of human milk should be used as the guide in determining these proportions.

6. The anti-scorbutic element should usually be present. In its absence the child should be carefully watched, and this element supplied when found necessary.

6. Sterilized milk, and foods made up of dried milk solids are deficient in the anti-scorbutic element.

7. Water is an essential ingredient of the food supply of the infant, and should be administered freely.

8. Foods which are deficient in one or more of the necessary ingredients, lead to the development of various forms of innutrition, particularly rickets and scurvy.

9. The infant should be fed at regular intervals, and not overfed.

10. The best artificial food for a healthy infant, is pure milk, from healthy cows, properly diluted, and sweetened, and sterilized if the conditions of nutrition permit.

SOCIETY PROCEEDINGS.

Georgia State Medical Association.

Forty-third Annual Meeting, held at Columbus, April 20, 21 and 22, 1892.

(Concluded from page 420.)

Second Day—Afternoon Session.

Dr. A. W. Calhoun, of Atlanta, read a paper entitled

SOME OBSERVATIONS UPON CATARACT OPERATIONS AND AFTER TREATMENT.

He reported 904 operations for cataract. The records of his first 47 cases had been lost, so that the report simply embraced the records of 857 cases. Of this number 203 were cases of soft cataract in children, and 654 cases of hard senile cataract in adults. The ages of the children ranged from three months to twenty-five years; the ages of the adults ranged as follows: 138 from 25 to 40; 82 from 40 to 50 years of age; 98 from 50 to 60 years of age; 157 from 60 to 70; 104 from 70 to 80 years of age; 28 from 80 to 90 years of age; 11 from 90 to 90 to 94 years of age, making 654 of hard cataracts, which, including 203 soft cataracts, makes 904. In the beginning of his cataract operations, Dr. Calhoun said if he got 95 per cent. of successes he thought he was doing well; but since the injection of cocaine and the advent of antiseptic surgery, a hundred per cent. of successes has been the result in his cases.

Dr. A. A. Smith, of Hawkinsville, read a paper entitled

GUNSHOT-WOUND OF THE STOMACH WITH REPORT OF A CASE.

The patient, a negro, had received a pistol shot (said to be) in the stomach. After a careful examination the doctor found that in the fight which had occurred two hours previously, his patient had received a wound directly over the stomach. A casual examination with the eye alone was all that was necessary to show that the ball had penetrated the cavity of that organ. A more thorough examination was made with the probe, and it was found that the ball had entered at a point about two inches below and to the left of the tip of the ensiform cartilage of the sternum. The probe passed readily into the cavity of the stomach, and the doctor supposed that the ball had passed through and lodged in some other portion of the body and did not pursue the examination further. At a third visit, which was about forty-eight hours after the boy had received the shot, he ascertained that there had been two or more free evacuations from the bowels, and to his great surprise the ball had passed with one of these evacuations. The wound healed by first intention, and just one week from the date of the injury the boy returned to his work.

Dr. R. O. Cotter, of Macon, read a paper entitled

SOME PRACTICAL POINTS IN REFERENCE TO EYE STRAINS.

He was impressed with the observation that the vast majority of general practitioners overlook the easily substantiated fact that such a great multitude of morbid reflex neuroses are brought about by eye strain; that is to say, uncorrected errors of refraction. He referred especially to hyperopia and hyperopic astigmatism. Myopes generally complain of not being able to see well enough at a distance. Headache was by far the most common accompaniment of hyperopia and astigmatism. These headaches were most common in the temples, frontal region, and vertex. They frequently appeared to be what are known as sick or bilious headaches, and are in any case truly distressing in character. Correcting refractive errors was the most prominent and by far the most scientific part of an oculist's work, and he feared that many practitioners overlooked these cases; that they met with one hundred of such sufferers where they saw one case of cataract.

Dr. Willis F. Westmoreland, of Atlanta, read a paper on

PLASTER OF PARIS IN SURGERY.

The object of the paper was not to discuss the various appliances adopted by different surgeons, but to present what he regarded as the best plan; one that showed results more satisfactory to the surgeon and patient than any other plan that has been presented in the past or present. It was not every plaster of Paris splint (so-called) that is applied to a fractured bone that does well. It must be properly applied, of appropriate material, with the fragments of the fractured bone properly adjusted to give the results which are so much to be desired. For a time this splint was used only in simple fractures, but now surgeons use them in compound comminuted fractures with the very best results, often saving a life or a limb that was formerly sacrificed to the knife, or other plans of treatment that resulted in the death of the patient. Dr. Westmoreland then gave the details of its application.

Adjourned.

Dr. R. J. Nunn, of Savannah, read a paper entitled:

PRELIMINARY OBSERVATIONS ON THE BEHAVIOR OF IODINE IN THE PRESENCE OF CAMPHOR, MENTHOL, THYMOL, ETC.

Alcohol.—If we take a saturated alcoholic solution of iodine, add to it as much camphor as it will dissolve, and its solvent capacity for iodine is immensely increased. In fact, it will be found that of a saturated solution of camphor in alcohol, 125 minims will dissolve 50 grs. of iodine.

Carbolic Acid.—Liquefy a quantity of carbolic acid with a little alcohol (about 1 per cent.), saturate the liquefied carbolic acid with iodine: next saturate this iodo-phenic solution with camphor, of which it will dissolve 300 to 400 per cent. This camphorated iodo-phenol will now dissolve or appropriate iodine until it becomes a dense syrupy liquid; or

Experiment 3. Prepare a saturated solution of camphor in carbolic acid. (This formula, which is original with Dr. Nunn, and has been used by him for many years, is possessed of valuable medicinal properties, and is known locally as pheno-camphique). The result of the saturation of this solution with iodine will be similar to that obtained in experiment No. 2.

Salol.—If camphor and salol are mixed in proper proportions, a liquid results which also has the power of dissolving iodine in large quantity, a blackish liquid resulting.

Thymol.—Thymol liquefies when mixed with camphor, and the resulting fluid is also a powerful solvent of iodine.

Menthol.—A mixture of menthol and camphor also liquefies, and in this liquid iodine is very soluble.

THIRD DAY—MORNING SESSION.

The first paper read was by Dr. L. G. Hardman, of Harmony Grove, entitled:

ECLAMPSIA AFTER DELIVERY, WITH REPORT OF CASES,

in which he summarized as follows:

1. That eclampsia does frequently occur after delivery.
2. That, judging from the cases presented, it occurs for the most part in patients with pyelitis.
3. That when we find pus in the urine of pregnant women, and can exclude specific disease of the kidneys, any bladder or urethral disease likely to cause it, and thus feel pretty certain that the pus comes from the kidney; and if it continues and begins to cause any general disturbance of the health, he believes it is our duty to induce abortion or premature labor, and thus save our patient a great risk.

Dr. A. G. Hobbs, of Atlanta, followed with a short paper entitled:

SOME REMARKS ON TONSIL EXCISIONS, WITH PRESENTATION AND DESCRIPTION OF NEW INSTRUMENT.

The instruments exhibited were the practical outcome of the speaker's efforts, through several years, to do away with some of the objections to the instruments most commonly used for excising hypertrophied tonsils, as the ring tonsillotomes, the guillotines, wire loops, etc. He still, however, uses the ring blades in young children, and in other cases where the tonsil projects decidedly with a base but little, if at all, larger than the body.

The objection to the guillotine or ringed instrument, was that the latter especially so often leaves a margin of bruised tissue, which in many cases ends in slough; and with neither of them is the operator quite certain of the exact amount of the tonsil he will clip, especially if the attempt is made on a mass that is soft, broad and nodulated. The cold wire snare causes great pain and requires a much longer time, and moreover, it leaves a contused stump unless the whole organ be extirpated, which he never does intentionally. The hot wire, even with the most approved guards, endangers the pillars and is, like the cold wire, quite a formidable instrument, at least in the mind of the patient.

The blades of the instrument exhibited were curved both on the flat and on the edge, and are in pairs, right and left. Either blade may, however, be used on either tonsil, especially if the operator is ambidextrous, by making the section upward or downward *according to the curve.* But in most cases it is easiest and safest to make the section upward to avoid cutting the base of the tongue; the flat curve of the blade will prevent the danger to the posterior pillar. The firm hold by the double hook enables the operator to lift the mass of tonsil tissue out of its bed from between the pillars to any extent, even when it is partially overlapped by large pillars. In a total of something over four thousand tonsil excisions, Dr. Hobbs finds himself choosing these instruments now in at least 75 per cent. of his operations.

Dr. McFadden Gaston, of Atlanta, read a paper entitled:

EXTIRPATION OF THE RECTUM FOR CARCINOMA.

The patient, a white man, aged 62 years, was referred to Dr Gaston by Dr. J. I. Darby, of Columbia, Ala. There was no family history of malignant disease, but his appearance led to the conclusion that there might be a cancerous cachexia. Having had occasion to report two cases of papilloma of the rectum with carcinomatous degeneration, which terminated fatally without operation, he recently advised in a similar case extirpation of the entire mass. This was done without serious consequences on May 30, 1891, and promised a good result, but there was a redevelopment of the induration above with a fatal result.

The patient referred to was received at the Providence Infirmary with rectal trouble. Upon digital examination and exploration with the speculum, there was found to exist an induration and thickening of the submucous tissues, extending from an inch within the anus up to the recto-colic junction. The mucous membrane presented a dark, congested appearance, attended with some oozing of blood. There was a marked constriction of the upper portion of the indurated structure, but admitting of the passage of the point of the index finger by forcible upward pressure, giving the impression that the structure above was not involved in the disease. It was therefore determined, after consultation with several colleagues, that they had a case of carcinoma of the rectum of a circumscribed nature, which warranted an operation, and extirpation was performed July 8, 1891. The patient did well up to the 16th of July, when a marked change came about rather unexpectedly during the day, ending in collapse. At 11 P.M. he died of septicæmia.

Dr. J. W. Hallum, of Carrollton, contributed a paper on

THE TREATMENT OF HÆMORRHOIDS BY CARBOLIC ACID INJECTIONS.

In most of the cases that apply for relief it is unnecessary to delay, but the speaker proceeds at once to make a radical cure of the pile tumor. He does this by mixing together pure carbolic acid one part, and pure glycerine two parts, and enough morphine and tannic acid that 10 drops of mixture will contain ¼ gr. each. Let this be well shaken and thoroughly dissolved before using it.

The position that he has found to be probably the best is the one which a toad assumes when in a sitting posture. In this position the patient will almost invariably pass out the tumors by an effort at straining down. There is more or less burning for a few minutes, consequent from the injection, after which, in the course of five or six hours, the tumor begins to throb and ache from the swelling, and also the death of the pile itself.

Adjourned.

Third Day—Afternoon Session.

The Association reassembled at 2:30 P.M., and after transacting some miscellaneous business, proceeded to the installation of officers. The following were elected:

President—Dr. A. A. Smith, Hawkinsville.
First Vice-President—Dr. Geo. J. Grimes, Columbus.
Second Vice-President—Dr. R. H. Taylor, Griffen.
Treasurer—Dr. C. E. Goodrich, Augusta.
Secretary—Dr. D. H. Howell, Atlanta.

On motion, the Association adjourned to meet in Americus, the third Wednesday in April, 1893.

The Third International Congress of Criminal Anthropology will be held at Brussels, from August 7 to 14.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthæpedic Surgery.

Stated Meeting, April 15, 1892.

Henry Ling Taylor, M.D., Chairman.

Dr. L. A. Sayre said that in his paper at the last meeting he had referred to a case of hip disease which he had seen in consultation with Sir James Paget and Mr. Adams, of London, which it was generally considered could not recove without ankylosis and deformity. He was fortunate in having the opportunity of presenting this patient at this meeting. This man could place the feet on a table, could squa down, and, in fact, could perform every motion so well tha it was difficult to see which had been the diseased hip.

THE EFFECT OF PERSISTENT MOTION.

Dr. John Ridlon exhibited a girl, nine years old, who had come to him at the Vanderbilt Clinic on April 23, 1891 Eight months previously she had received an injury to the right elbow, which was diagnosticated as a "fracture of the coronoid process of the ulna, and a dislocation backwards o the radius and ulna." She was attended by a well qualified practitioner of this city. The arm was immobilized for abou four weeks, and then passive motion was commenced. Twice daily the forearm was flexed and extended on the arm t the limits of tolerance, and twice weekly, under an anæsthetic, the forearm was flexed and extended to the norma limits of motion. This treatment was faithfully continued for seven months, during which time, the range of motion gradually became more restricted, the joint more and more swollen, and more painful under the attempts at motion Examination showed the forearm flexed on the arm to a right-angle, much swelling about the joint, enlargement o the superficial veins, and atrophy of the muscles of the arm and forearm. The swelling had a pulpy feeling, but no point of fluctuation could be detected. The bony points were so obscured that the exact nature of the injury could not be determined. There was no motion at the joint, and attempts at motion caused pain, and developed intense muscular spasm.

The treatment adopted was as follows: The head was ben down, and the wrist put in a "halter" made out of a rolle bandage knotted around the wrist and neck. The slack of this was taken up as the rigidity yielded, and at the end of two weeks the joint could be completely flexed. In this position the joint was held without motion being once permitted or tested for eleven months. The pain disappeared, the swelling gradually subsided, and when the halter was removed there was found to be free, painless motion from a right-angle to normal flexion. Since then, there has been no treatment, and the range of motion in the direction of extension is gradually increasing.

Dr. W. R. Townsend said that this girl had been brought to the Hospital for Ruptured and Crippled about two years ago by her attending physician, who said that passive motion had been made under ether about three times a week since the fracture, to prevent ankylosis. Dr. W. T. Bull, who saw the case in consultation, agreed with the speaker in advising rest. The attending physician dissented from this view, but finally said he was willing to give the joint rest for a limited time, if he were relieved from all responsibility as to the result. The case was accordingly treated in the hospita with a plaster of Paris splint for about four weeks, when the mother objected to a continuance of this treatment Dr. Bull again saw the case in consultation, and the opinion was then expressed that there was a beginning osteitis, and that if motion were kept up the child would undoubtedly have a stiff elbow. The patient and doctor dissented again and wished passive motion made, so she was then discharged from the hospital out-patient department.

Dr. S. Ketch said that if the arm were moved beyond a cer- in point, especially in rotation, there is reflex spasm, and thought there was still some active disease in the elbow nt. He asked if the halter allowed of pronation and supin- ion.

Dr. Ridlon replied that the halter did not prevent these otions, but so far as his experience with it had gone, when operly applied under the clothes, the children, as a matter fact, do not attempt to make these motions.

Dr. Ridlon also presented a case for diagnosis.

A man, 34 years old, came to him at the Vanderbilt Clinic February 15, 1892. For two weeks, he had been stooping d stiff in the lumbar spine, with pain in the back and wer abdomen, and, at times, down the front of the thighs. ven years ago he had a similar attack, at which time, ter suffering for four weeks, he went to the dispensary of orthopœdic institution in this city, where the diagnosis is made of Pott's disease, and a Taylor spinal brace applied. e remained in bed for two months wearing the brace, but ithout any relief. He was then admitted to the St. Francis ospital, where a blister was applied, and the pain imme- ately relieved. At the end of two weeks he was quite ell again, and remained so up to the present attack. Exam- ation revealed the whole lumbar spine curved backward d rigid; there was psoas contraction on the left side, but one on the right; and there was a doubtful fullness in the ft iliac fossa. He was treated with anti-rheumatic reme- es, and soon showed improvement, and in the course of a w weeks, felt entirely well. There is now no spinal curva- ire, no rigidity, no psoas contraction, and the patient is ite well, except that at times, after long sitting over a ench at his work, he feels the back somewhat stiff.

AN INEXPENSIVE HEAD SUPPORT.

Dr. Royal Whitman exhibited a support which he had evised for a child with mid-dorsal disease, in whom there as a tendency for the shoulders and the whole body to oop forward. The support consisted of a curved piece of eel attached to the back of the brace used in connection ith lateral pads for holding the shoulders back, a form of pparatus which he had already exhibited and described.

Dr. V. P. Gibney then exhibited a series of operative ases.

ANKYLOSIS OF THE HIP AFTER TYPHOID FEVER.

The first case was that of a boy, 11 years of age, whose ouble dated back to an attack of typhoid fever in Novem- er, 1889. He was admitted to the hospital July 14, 1890, nd at that time his general condition was fair; there was long and deep cicatrix over the right hip. There was bout half the normal motion. The left hip was held flexed at 35°, and there was much spasm. His mother died of phthi- is, but the other members of the family were healthy. ne month later the right limb could be extended to 180°, nd the left limb to 170°, with little or no motion at the nee. He was then allowed out of bed, wearing a brace on he left side and a high shoe on the right. On November 9 there was some tenderness around the joint, but none in he joint. The brace was left off and he was given cod liver il and allowed to walk around. On January 16, 1891, the ight thigh was flexed on the abdomen. The adhesions were roken up by manual force, and in doing so, a "snap" ccurred. The tensor vaginæ femoris and the fascia were ivided subcutaneously, and the deformity yielded visibly. he limb was then hyper-extended, abducted, and rotated utward, and put up in plaster of Paris. On February 11, as he thigh was flexing, the limb was placed on an inclined plane with a weight and pulley, and this treatment was con- inued for nearly one month. The left hip was then extended t an angle of 158°, with practically no motion, and the right hip at 170°. On June 13 the right thigh could be completely extended; the left, to 140°. On October 23, under ether, it was found that the hip could not be fully extended, so the tense bands attached to the anterior superior spine were divided, and then the limb almost completely extended, and put up in plaster of Paris. On January 18, 1892, he was etherized, and a femoral osteotomy performed, and the limb hyper-extended and put up in plaster, and by February 17 there was firm union, the limb was extended at an angle of 175° and with 5° of motion. The ordinary hip splint was then applied. On March 5 the limbs were parallel, union was very firm, and his general health was good. On April 6 he was allowed to walk about without any support.

EXCISION OF ONE HIP IN A CASE OF DOUBLE HIP DISEASE WHERE SACRO-ILIAC DISEASE WAS FIRST DIAGNOSTICATED.

The next case, a boy, nine years old at the time of his admission on January 22, 1890, had a good family history, and his hip disease was attributed to a fall in September, 1889. Before coming to the hospital, he had been treated in a dispensary for sacro-iliac disease. At the time of admission, the thigh could be flexed to 60°, and extended to 180°; all the movements were restricted by pain. On March 4, 1890, both thighs and knees were flexed, and there was much reflex spasm about the right hip, and somewhat also about the left. The hips and knees were extended, and the limbs made parallel, and they were then put up in plaster of Paris spica. About this time the temperature began to rise to 102° every night, and to fall in the morning to 98.8°, and there was marked tenderness in the right hip. On March 29, there was fullness and deep fluctuation in the upper fourth of the thigh, and a needle withdrew some pus and blood. A hip splint was applied, and the child put to bed. On April 8, a double spica with traction was applied. On September 3, about seven ounces of pus were removed from the right thigh by aspiration, and on the 30th of the same month, the child was etherized, an old sinus curetted and enlarged, and a counter-opening made. The head and neck of the femur and the acetabulum were found to be diseased. The temperature remained high until October 15, 1890, when a large abscess was found over the trochanter major, which did not communicate with the sinus. On January 28, 1891, after poulticing, the abscess opened spontaneously. On February 10, the child was etherized, and excision performed. The head and neck were curetted, a counter opening made, and a double spica applied. The dressings were changed every third or fourth day, peroxide of hydrogen solution being used to wash out the cavity. By July 2, the excision wound was almost completely closed, there was some infiltration about the joint, but very little spasm and tenderness, and the limb could be extended to 180°, and flexed to 160°. By September 16, flexion had been increased about 10° in the right limb, and the left limb could be extended to 180°, and flexed to 135°, motion being slightly restricted by spasm. On December 16, a jointed splint was applied, upon which he moved around with comfort. On February 27, 1892, it is noted that there is a fair amount of motion at the right hip without pain, the other limb remaining unchanged since last note.

EXCISION OF HIP WITH FAIR RESULT, SCARCELY FINAL.

The next case was a girl who was eleven years of age at the time of her admission on June 6, 1889, with hip disease of six months duration. Her mother had died the previous year of some pulmonary affection. The child was poorly nourished, and could hardly stand; the right limb could be flexed to 135°, and abducted one-fourth of an arc, and the left correspondingly abducted; there was marked tenderness and spasm. On July 31, 1889, a small quantity of pus was removed by aspiration, and the hip splint was applied. On

December 9, of the same year, the limb was much abducted, and there was some infiltration in the upper part of the thigh. On May 13, 1890, the hip was very acutely inflamed, and the child had night cries, and tonics and stimulants were ordered. On December 2, there was very little discharge and the wounds looked healthy. On February 12, four sinuses were discharging freely, and there was considerable burrowing of the pus. On April 24, 1891, excision was performed, involving three of the sinuses. The capsule was practically gone, and the head of the bone carious, and there was a shell of exfoliated bone. After dividing the bone at the neck, it was found that the disease had extended into the shaft, so 1½ inches were removed, and the parts thoroughly curetted, packed and drained. On July 18, the child was etherized, and some sinuses again scraped out. On July 27, there was 10° of motion, and the limb was extended to 170°. By August 20, there was scarcely any discharge, no tenderness, the limb could be extended to 180°, and there was 20° of motion. On February 18, 1892, it was noted that the angle of greatest flexion was 100°, and greatest extension, 180°; there was no spasm or pain on manipulation. At present, she is wearing a caliper splint, the right thigh can be flexed nearly to 90°, abduction is quite good, and extension is nearly perfect.

CASE FOR DIAGNOSIS, PROBABLY SUBACUTE RHEUMATISM.

A little boy was next exhibited, who had been sent to the outpatient department of the hospital about three weeks before for a diagnosis. For three months, he had complained of pain and stiffness in the hip and knees. He had the walk of hip disease with slight spasm, and slight limitation of motion, and it was a question whether there was really incipient hip disease, or whether there was a neurotic element in the case. He was given the salicylates internally. Soon after, he began to complain of pain in the knees, and ankle, while the hips had improved slightly. He had been in the hospital only two days, but in this time, there had been some improvement. There was evidently pain, and undoubtedly also an inflammatory process, as on several occasions his temperature reached 101° or 102°.

ATONIC KNOCK KNEE; FAILURE TO RELIEVE BY APPARATUS; SUPRA-CONDYLOID OSTEOTOMY; SUBSEQUENT SYNOVITIS: LATER, STILL, APPARATUS; RESULT, VERY UNSATISFACTORY.

The fifth case was a girl who first came to the dispensary on January 1, 1888, when fourteen years old. She then had right knock knee, which was treated with a Thomas knock-knee splint. The brace was worn for about one year, and then was removed, and the shoe built up on the inner side. On August 5, the knee had again become relaxed, and plaster of Paris was applied. On October 21, there was a synovitis of the right knee, and the girl was admitted to the hospital shortly afterward. At this time, both knee joints were relaxed, and could be hyperextended, there was flexion to about 120°. The knee joint was distended with fluid, and there was some joint tenderness. On November 14, 1889, about twenty ounces of clear fluid were drawn from the joint, which was then irrigated with carbolic acid solution, 1:40, and the limb put up in plaster of Paris. On January 30, 1890, there was again some effusion into the joint, and she walked with some stiffness. There was flexion to 140°. On February 27, she was discharged unimproved, and on March 31, she was re-admitted. At this time there was marked lateral improvement, the tibia could be abducted so as to make an angle of 153° with the femur, and adducted to 175°; the knee could be flexed to 110°. There was also much pain in the muscles about the right hip and thigh and considerable tenderness in the iliac fossa with prominence just in front of the great trochanter. On September 18, 1890, the pain had disappeared from the hip and she was wearing a Knight posterior knee brace. She was discharged from the hospital then, but again admitted on May 27, 1891. Finally, a supra-condyloid osteotomy was performed from the outer side, and the knee overcorrected, and put up in plaster for a while. At present she is wearing a splint without motion at the knee, and although she walks well, there seems to be no prospect of improvement.

Dr. V. P. Gibney read a paper entitled:

SOME OF THE INDICATIONS FOR OPERATIVE INTERFERENCE IN ORTHOPEDIC SURGERY.

The paper dealt first with the range of orthopedic surgery as held by the majority of surgeons practicing this specialty throughout the world. It commented on the brilliant results obtained by general surgeons in cases that were strictly orthopedic. It emphasized the importance of supplementing operative procedures with mechanical appliances.

It was suggested that orthopedic surgery might be advanced if one devoted as much time to the clinical history and the pathology of the disease which produces deformity, as one does to the devising of splints and modifications of splints. The importance of devising splints to suit individual cases and to meet certain conditions, was regarded as an important part of orthopedic surgery.

It was stated that the orthopedic surgeon seldom has an opportunity of putting a splint on a case in the very first stage of the disease; that many of the cases of what are called early hip disease were not early cases, but that deformity had already arisen when they came to mechanical treatment. The same was true of Pott's disease of the spine.

Some of the indications for operative interference were mentioned, as correction of deformity in these early hip cases by manual force under ether, by division of tendons and muscles, if the correction were difficult, and in the advanced cases, where the disease was fully arrested, osteotomy below the trochanter minor was suggested as a valuable addition to our therapeutics.

With regard to abscesses, it was urged as good orthopedic surgery to make incision, if four or five aspirations failed to relieve. It was further suggested that old sinuses and pockets of pus should be treated by operative interference.

Operative interference in spinal disease was not recommended except where a severe trauma had fractured the lamina, and where pressure had resulted. In these cases, laminectomy was advised, but it was suggested that in many instances of this kind, the ordinary mechanical treatment proved of valuable service.

In disease of the knee, partial arthrectomy was advised in preference to complete arthrectomy or to excision, especially in children. In the internal derangements of the knee, operative interference was advised rather than the prolonged use of apparatus and fixation splints. In synovial disease, pure and simple, an occasional aspiration of the joint, with strapping, was regarded as good orthopedic surgery.

(*To be concluded.*)

A Cheap Method of Administering Fat.—Dr. Mershinski, by boiling milk and lard together for a considerable time, prepares a liquid which contains a large percentage of fat, one quart containing from four to five ounces. He gives a pint before rising and another at eleven o'clock. "Breakfast," at one o'clock, consists of carbohydrates; dinner, at five, of nitrogenous matter. Experiments prove that the diet is generally well digested, and the patient increases in weight. Dr. Mershinski considers this preparation very suitable for hospital and union practice in cases of malnutrition not connected with disease of the stomach, liver, intestines, or pancreas.—*London Lancet.*

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SATURDAY, MAY 21, 1892.

REGISTER BY MAIL!

To the Members of the American Medical Association:—The committee on registration desires to have the coming Detroit meeting remembered as one of uninterrupted pleasure.

It will be no pleasure to you to stand in a long line waiting to be registered just at the time when you will want to be engaged in the work or pleasures of the meeting. You can avoid all that by *registering by mail.*

You will have the proper blanks sent you in a few days. When you receive them fill them out, enclose your fee and credentials and then, when you reach Detroit, by applying at the Association post-office you will receive AT ONCE your receipt and membership card. Don't forget to register by mail.

DAVID INGLIS.
Chairman Registration Com.

NON-PUERPERAL PHLEGMASIA DOLENS. TROUSSEAU'S SUGGESTION.

The *New York Journal of Gynecology and Obstetrics*, recently contained an abstract of a discussion, before the Academy of Medicine Obstetrical Section, on the subject of "milk-leg," as it is called, or "phlegmasia alba dolens," as it was formerly named. The point here to be considered is the fact that there are phlegmasiæ, in some respects closely resembling milk-leg, outside of the puerperal pale. DR. W. GILL WYLIE, in the discussion above mentioned, is reported to have said that he had seen at least two cases of so-called milk-leg that were the outcome of gynecological operations. In one of these, the symptoms were almost typical of those of phlegmasia alba dolens. In that case the surgeon had curretted the uterus for a large fibroid, the cavity of the organ having a measurement of eight or ten inches. The other case followed a laparotomy. A third case, the origin of which was not clear, had interested him and had been the subject of an exploratory operation for a condition somewhat vaguely described as "cellulitis." The leg was greatly swollen and the patient had high temperature and occasional chills. The laparotomy did not yield much information beyond bringing to light a small amount of grumous material along the line of Poupart's ligament, which material was removed. The patient ultimately recovered, but whether because of the operation or in spite of it, he was unwilling to declare. In his opinion these cases have a septic rather than a merely obstructive origin. DR. GRANDIN coincided in this latter opinion and found his proof in the fact that puerperal form of the disease is more rare in these days, and in modern practice, by reason of the greater regard paid to antiseptic regimen; sepsis had to do with the only case that had come to him in his own practice.

DR. RALPH WALDO had seen a case of venous trouble following an attack of pneumonia, which was marked by a weakened state of the heart as a probable cause, for as has been stated by others a weak cardiac action will favor the formation of thrombus. DR. BUCKMASTER, editor of the journal above named, had seen two cases of phlegmasia alba dolens, one of which might properly be classed as non-puerperal, although complicating a puerperal convalescence. In that case there had been a laceration of the cervix uteri. As a prophylactic measure vaginal injections of creolin had been ordered, but the nurse accidentally gave an intra-uterine charge. Twenty-four hours later an inflammatory condition of one leg began, which was not anticipated to occur and which very possibly might not have occurred had it not been for this extraneous and accidental source of irritation.

It is well, at this point, to bear in mind the positiveness of TROUSSEAU in the matter of spontaneous coagulation of the blood in cancerous subjects. He has been followed now and again by other observers who have noted, especially in regard to abdominal cancer, a tendency to coagulation within the veins of the lower extremities, on one side or on both. Oftentimes the life-signs of cancer so located are obscure and unnoticed. But the observations of TROUSSEAU are useful as given in his chapter on phlegmasia alba dolens. He says: "The semeiotic value of phlegmasia is so great in the cachexia of cancer that I regard this condition as a sign of the cancerous diathesis as certain as sanguinolent effusion within the serous cavities." This suggestion implies that thrombosis may be a mediate result of almost any constitutional disease that has, among its immediate entailments, a weakened heart. It implies, further, that another step of progress may be possible in the understanding of "cardiac syncope" and "heart failure," the catchalls, pathologically speaking, of coroners and indolent diagnosticians. Many mysterious cases of death have undoubtedly for their underlying cause sepsis or cancer, deeply located, having intra-vascular lesions, and only to be made plain by a venous autopsical examination, at parts rendered suspicious by congestion and œdema. A case of cancer of the pancreas, illustrative of the relations above described has appeared in the *British Medical Journal*, December 19, with notes by DR. LEONARD CANE of Peterborough. No organ, other than the pancreas, was found to be the seat of cancer, which was of the scirrhus variety.

POST-DIARRHŒAL ACUTE ATAXIA.

DR. HENRY J. BERKLEY, in the *Johns Hopkins Hospital Bulletin*, February, gives an instructive case of pseudo-tabes following an attack of diarrhœa. This is probably the first recorded case of its kind, and affords room for possible differences of opinion as to etiology; the argument of Dr. BERKLEY, however, is well sustained, and worthy of being weighed by his co-laborers.

The term "acute ataxia" has been employed by PROFESSOR LEYDEN, of Berlin, in *Zeitschrift für klinische Medicin*, 1891, to describe certain cases of suddenly beginning ataxia of movement; first, the cerebral variety, characterized by disturbances of speech and psychical symptoms in addition to the ataxic phenomena; and second, the sensible, marked by the presence of various anæsthesias and paræsthesias, without psychical complication. With both these types there may be paralyses, or they may be absent in both. Following certain of the infectious diseases, notably typhus fever and diphtheria, there may occur a form of ataxia, indistinguishable clinically from the ordinary ataxic conditions in tabes dorsalis, but readily separable in the light of the history and progress of the attack. There is the same gait, the steppage, the same pounding of the feet, the incoördination and local anæsthesias; the major symptoms are identical in both affections. These cases of infective history either get well in the course of a few weeks, or enter upon a chronic stage; death seldom takes place in their early evolution.

The patient, in this case, was a stoutly built female, aged 58, with a good health record until the summer of four years ago. An attack of intestinal catarrh at that time occurred, not remedied during three months of home treatment; it was not sufficiently severe to incapacitate the patient for domestic work. A sudden access of ataxic symptoms made it necessary to seek hospital treatment. In the hospital, the diarrhœa was checked and physical health improved, but during convalescence the sight of the right eye was lost, and that of the left became very imperfect. The ophthalmoscope showed white atrophy of optic nerve in both eyes, greater in the right than in the left. After the acute stage of the affection, impairment of vision did not progress, but showed a slight improvement in the left eye. Aside from the optic neuritis, the nervous history of this case may be divided into three periods; first the acute, marked by extreme muscular incoördination of the inferior extremities and intense vertigo; then a second stage, showing a recession of the acute ataxic symptoms, replaced by others indicative of irritation of the spinal reflex centers; lastly, a third stage, with ataxic symptoms in the upper as well as in the lower limbs, suggestive of an extension upwards of the degeneration in the posterior columns of the spinal cord.

The hypothesis of the writer is that this long chain of symptoms had its beginning in the somewhat unmanageable diarrhœal attack. Thence an auto-infection took place from some of the microörganisms inhabiting the intestinal canal and finding their way into the system through some lesion of the intestinal mucosa, and thereby irritating both the central and peripheral nervous systems. The optic neuritis can in this way be explained by the lodgment of pathogenic material at the chiasma of the optic nerves. This seems to be just the fit point for the deposit and growth of pathogenic organisms, and a room for the action of their toxical products. "This place even excels the region of the fissure of Sylvius, and the protuberance in the loose and folded character of the meninges, and the number of blood-vessels in its meshes, seem to afford great facilities for an exudation and stasis of the blood." The nidus afforded at the optic chiasm could facilitate the growth of whatever pathogenic germ might be brought there, and it or its irritative products might act with greater intensity to the right or to the left, giving such unequal inflammatory results as were found in the case above outlined. The optic neuritis, after measles and some other infectious diseases, may find its explanation in a neuritis caused by the abundance of poisonous germ products, as in other forms of infectious neuritis.

THE SO-CALLED KEELEY CURE.

In previous issues we have directed attention to the fraudulent claims of this much advertised and heralded business. The following clipping is an apt illustration of these pretensions, and which is entirely untrue:

> The Keeley treatment for the liquor, opium and tobacco habits has received the endorsement of the United States Government, and will now be used in all of their State and military homes for disabled volunteer soldiers and sailors. This is strong proof of the superiority of the treatment. The patronage of the Keeley institutes has doubled, and in many cases quadrupled, in the past six months.—*Galina (Ill.) Gazette*, May 12, 1892.

The daily press announces this week that DR. KEELEY occupied the pulpit of DR. TALMAGE last Sabbath, where he announced that but three persons knew the constituents of his cure, and that the secret would never be divulged. This is certainly a strange and new gospel to be proclaimed from a Presbyterian pulpit. The claims of the orator for his secret nostrum, with his avaricious greed for gold, should be paralleled with the every day work of more than five hundred physicians who give freely, without money and without price, their invaluable services to the poor people who fill to overflowing the hospitals and charitable institutions of New York and Brooklyn.

This parallel would be incomplete were we to withhold a reference to the Messiah, supposed to be preached by the aforesaid Dr. Talmage. Did that beloved physician withhold from the world His professional skill and keep it a secret? Did His greed for shekels tally with that of this man Keeley? Did the Messiah and His disciples withhold from the world a knowledge of a mode of salvation for sinful men?

And yet this prince of nineteenth century charlatans is allowed to occupy a prominent church pulpit for the nefarious purpose of advertising himself and his wares.

It is reasonable to infer that the preacher stood in with the quack for revenue purposes, in order to lay up for himself some treasures of a very earthy sort.

Those who were using the temple for trade and sordid gain were driven from it by the Master. The cure He used on that occasion was a liberal application of a whip of cords. The ratio of cures recorded was one hundred per cent.

NEW YORK CITY BOARD OF HEALTH.

An interview in the New York *Tribune* with Dr. E. G. Janeway, formerly one of the Commissioners of Health, reports him as asserting that the City Board of Health is being corrupted into a purely partisan concern. He states that good and experienced men have been removed at a day's notice, in a summary way that he would not employ in the case of a house-servant. For the first time in many years, he says, political considerations are allowed to outweigh all others, and he assails the management as a menace to the public health. He predicts that the machinery of the Board will be used to satisfy ward politicians, and not for the removal of danger to health, and he condemns the recent changes as showing a policy of action that is "unwise, injudicious and unsafe."

In order to "back up" his opinion in this regard, and enable him to speak out freely his convictions about it, he resigned his positions as Consulting Physician to the Board, Attending Physician at Bellevue Hospital, and his chair of the Theory and Practice of Medicine at the Bellevue Hospital Medical College, all of which positions were more or less interlinked. The people who brought about these resignations, he says, would have the public believe that he had been constrained to give up his appointments by reason of "his large private practice and his increasing personal obligations," but he refuses to look at it in that light. He takes that course as a protest against what he regards as a detestable and dangerous measure leveled against worthy and able medical men.

It is said that it will not be difficult to fill the vacancies so made. Drs. A. A. Smith and H. M. Biggs are named as the probable successors of Dr. Janeway, who was himself the successor of the great Flint.

Dr. Janeway has the name of being a conscientious and solid kind of man, who will be benefited rather than injured by the distasteful experiences he has had recently to undergo. *Floreat justitia.*

In the same paper, a little paragraph of six or seven lines gives a hint as to the kind of timber that holds up our city's government. The Woman's Hospital of New York found it necessary to get the permission of the Board of Aldermen to sell their present real estate to help pay for its proposed new hospital. The requisite resolution was adopted by the Board, "on condition that the hospital authorities, in their new location, *set aside fifty free beds to be at the disposal of the Aldermen.*" The present capacity of the hospital is 130 beds. Those Aldermen have probably as much right to demand fifty islands in the Pacific Ocean, as to expect to get those aforesaid free beds.

THE AMERICAN MEDICAL ASSOCIATION.

In the make-up of the program for the ensuing meeting, special pains have been taken to give the greatest possible amount of time to the Sections for their work. This is as it should be. Seven distinct sessions have been provided for, to enable the Section officers to get through with their work without a seeming show of undue haste, or a reading of papers by title and then passing them over.

Further changes will no doubt be suggested from time to time as necessary to meet the requirements of future meetings. Progress means change, to stand still is stagnation.

That these changes may be made with the least possible friction and to favor the scientific purposes of the Association, a well matured plan was proposed in one of the Sections last year that is deserving of thoughtful consideration.

It was, that there be created an executive committee of each Section, consisting of three members, each serving for three years, the first three serving respectively one, two and three years, the yearly vacancy being filled by the retiring chairman of the Section. It was proposed that these several Section committees should together constitute a general business or executive committee of the Association.

To this committee could be referred all such matters as the selection of place and time of meeting, the nomination and selection of the general officers of the Association. This committee could also hear and act upon most other business affairs of the Association.

This would place a very considerable amount of onorous work upon the members of the Committee, but its compensation would be found in the appreciation and recognition of its time saving labor to them, by the great body of members, a large proportion of whom are, at every meeting, new men and not familiar with the necessities and work of the organization.

The proposed plan would place the business of the Association in the hands of the older and more experienced members, and at the same time the annual rotation of Section chairmen would continuously eliminate the old and introduce the warmth and enthusiasm of new blood. Stagnation and turmoil would not likely occur under such conditions. The prosperity of the Sections and of the Association being identical, this committee of experienced members could originate and formulate any measures they may deem essential for the prosperity of the Association, and thus keep it in all respects abreast of the times and of its demands.

THE PHYSICIAN IN PUBLIC AFFAIRS.

The *Post Graduate*, of New York, says:

> Much is due to Dr. R. P. Bush, Speaker of the Assembly, a graduate of the University of Buffalo, for his steadfast and intelligent opposition to the nullification of this good law. We also owe him much as a profession for his opposition to the various schemes for cheapening medical education, of which the proposed Bayard Medical College was the latest manifestation. He was always on the alert for these schemes, and by his knowledge of what they really meant, and his sagacity and political position, he easily defeated them.

We wish it were possible for every State Legislature to have in it a man of the type and character of Dr. Bush, of New York. The common desire so generally shown by the profession in its action, as manifested in numerous medical societies petitioning Congress to pass a bill creating a Secretary of Public Health, indicates an awakening interest in the special relations which exist between the practitioners of medicine and the general public.

No one thing so nearly concerns the immediate welfare of any and all communities as that of the personal health of the people. With perfect mental and physical health the limits of possible accomplishments cannot be defined, and per contra, the demon of disease has swept whole nations from the face of the earth.

For these reasons alone the physician should be known as a man interested in the public weal. And in no one way can the people so readily realize this as through a knowledge that there is a Cabinet officer of Public Health who is the Nation's constituted advisor of the President on all subjects pertaining to the physical and mental well being of all the people.

CLASSIFICATION OF MORBID PROCESSES.

Naturalists have sometimes been criticised for the great amount of time which they put on classification of specimens. It does sometimes seem that the efforts of some workers in paleontology, for instance, never rise above attempts to detect minute, and perhaps unimportant differences between specimens, for the purpose of naming new species, or new varieties. Such work is often open to the objection of Agassiz, that it is "too much descriptive and not enough comparative." But classification in its proper sphere is invaluable. But it should follow, not lead. When revised classification is based upon new discoveries of relations, it becomes an outline of the advance, *and a faithful mirror of progress.*

Probably the most elaborate attempt to classify diseases, was that made by Dr. Mason Good, in his famous "Study of Medicine." His division of diseases into classes, orders, families, genera, species, etc., was unfortunately one not adapted to the subject in hand. Since his day many changes in classification have occurred. Dropsy, which was once considered a disease, has been relegated to the group of symptoms. It was found to be secondary to disease in certain organs. The relation of dropsy to these diseases was of a mechanical nature and its secondary character was in consequence quite readily discovered. The value of the knowledge of the secondary character of dropsy, will of course be readily admitted, although we still often administer remedies directed particularly against the symptoms.

Sudden death has been found to follow many pathological conditions so that the term apoplexy has gradually lost its original signification and come to mean only hæmorrhage into the brain. The attempt to broaden it into meaning hæmorrhage into other organs is to be deprecated, and the recent proposal to drop the term entirely has much to commend it.

Diarrhœa has long been known as a symptom of numerous pathological conditions, so that it is no longer possible to use the term correctly as the name of a disease. This much then may be said to have been accomplished,—the striking out of the category of diseases, of the names of symptoms which are mechanically secondary to definite disease of certain organs, and of the names of symptoms which are secondary to various morbid changes, or coördinate with them.

But the next step in advance in this direction is coming very slowly. This step is the recognition that many of the diseases now spoken of as inflammations of special organs, are in reality but symptoms of general processes. Such recognition can not by any means diminish the importance of these conditions as individual symptoms, cannot detract from the special attention which must be given them therapeutically, but by securing more comprehensive views of individual cases, cannot fail to redound to improvement in treatment. Among such conditions, pleurisy may be mentioned. It occurs as a tubercular affection; it occurs as a complication of pneumonia; it is frequently a symptom of Bright's disease; it is one of the many features of influenza. Meningitis must be put in the same category. To say that a patient has meningitis is not enough. We must also know to what disease the meningeal condition is due. Is it due to tuberculosis, to Bright's disease, to influenza? Or is it due in the given case to some other specific general disease or diseases not as yet differentiated? Peritonitis, and broncho-pneumonia belong in the same category.

Convulsions in infancy are no longer considered a disease, but symptomatic of various disorders. Acute torticollis, so long attributed to cold, has been found to be an occasional symptom of malaria. Many of the cases of acute torticollis present evidences of general infection. The patients have elevation of temperature, and more or less depression, so-called general malaise, which can not be accounted for by the local conditions alone. The readiness with which such cases yield to the administration of antipyrin, which not only relieves the pain, but removes the muscular spasm, and all the general symptoms, is further evidence of the general character of the disorder.

All this goes to show, that we are approaching that ideal time when diseased conditions can be classified upon an etiological basis. But we have gone so far in this direction in some matters, that a compromise is necessary. When the determination of the etiology of a given affection is beyond the pale of the methods of research available clinically, the more exact scientific classification must wait. The practical classification, which means of course the nomenclature of disease, is one which should assist the practitioner, not only in his preliminary study, but in his actual work at the bedside. It therefore becomes necessary to restrict the classification upon an etiological basis, to the possibilities of utility to the practitioner.

EDITORIAL NOTES.

New York Eye and Ear Infirmary.—This institution has recently received a gift of $80,000 from the widow and children of the late Dr. Abram Du Bois, a pioneer specialist in eye diseases in New York City, and a generous giver to this institution during his lifetime. A memorial building, or pavilion, will be put up with this donation, to bear forever the name of Dr. Du Bois. This gift was not the result of bequest, but a genuine gift on the part of surviving members of the late doctor's family, freely given because of the fifty years of active interest in the Infirmary, its professional work and its government. The trustees expect to raise another equal sum, and thus provide for the construction of three pavilions, with a total bed accommodation of 150, besides private rooms. The Infirmary is now the second largest of the kind in the world, and last year treated about 21,000 cases of diseases of the eye, and 37,000 cases of other ailments. Nearly all the patients are treated free of charge. The new pavilions, when completed, will occupy 100 feet on Second avenue by about 150 feet on Thirteenth street, the old and well-remembered locality where hundreds of ophthalmologists have received instruction.

American Medical Temperance Association:—The annual meeting of this Association will be held on Tuesday, June 9, 1892, at 7:30 p.m., in the room assigned to the Section of Practical Medicine of the American Medical Association. An address will be delivered by the president on the Objects of the Association, and on the important physiological and therapeutic differences between the hydro-carbons constituting proximate elements of living vegetable and animal bodies, and those resulting from bacteriological or retrograde action. Also a paper on some dangers of the use of Alcohol in Acute Diseases, by G. N. Quimby, M.D., of Jersey City, N. J.; and a paper on Heart Failure from the Medicinal Use of Alcohol, illustrated by cases, by T. D. Crothers, M.D., Hartford, Conn. Discussions and miscellaneous business will follow. It is possible that a social Temperance Breakfast will be enjoyed on Friday morning at 8 o'clock.

The Red Cross Society.—Miss Clara Barton, president of the National Red Cross Society, has published a notification that her Society makes no appeals for charity, nor arranges concerts, or shows, nor endorses any efforts by others to raise funds. Voluntary offerings are received, acknowledged and applied. "The Red Cross," she says, "is an organization created by statutes and treaties. Its proper work is to mitigate the horrors of war, but it has officially extended its labors to fields of famine and pestilence, and disaster by flood and fire. Its functions are limited and well defined, and beyond these limits it cannot allow the use of its name and symbol."

Section on Dermatology and Syphilology.—In order that the meeting of this Section may take a practical turn and be of the greatest service possible, there has been in preceding years a "Question Box" in which could be placed questions for answer, and suggestions for discussion, in regard to any matters belonging to the Section.

These questions are assigned by the Chairman to different members present, as long in advance as possible, who answer them as may seem best. In this way matters of very considerable practical interest have at times been brought before the Section, and valuable discussions have been afterwards called *forth*.

Inasmuch as some of these questions to be propounded may require some thought, it is desirable that they should be on hand as early as possible. The Chairman, therefore, requests that if any members of the Association have any questions in regard to Dermatology and Syphilology which they would like answered before the Section, or questions to propound for discussion, they would send the same to him at the earliest moment, that they may be incorporated with the work of the Section at the coming meeting at Detroit. L. Duncan Bulkley, M.D., 4 East 37th Street, New York.

A DINNER will be served to members of the Obstetric Section at the ensuing meeting of the American Medical Association. Members who wish their names to go into the pot for this occasion should not delay in sending their names to Dr. W. P. Manton, 83 LaFayette Avenue, Detroit, Mich.

WILL the author of the communication on "The Drink Habit" please send us his name?

PROGRAM OF THE SECTION OF NEUROLOGY AND MEDICAL JURISPRUDENCE.

TUESDAY, JUNE 7, 3 P.M.

1. Address of the Chairman: "Organization and Work of the Section of Neurology and Medical Jurisprudence," Harold N. Moyer, Chicago.
2. The Relation of Physical Violence to Hernial Protrusion through the Abdominal Walls, and its Medico-Legal Aspect," Thomas H. Manley, New York, N. Y.
3. "Consent in Medicine and Surgery," Clark Gapen, Omaha, Neb.
4. "Responsibility in Will-making," Henry A. Chaney, Detroit, Mich.
5. "Aphasia," Philip Zenner, Cincinnati, O.
6. "Hysterical Concomitants of Organic Nervous Disease," C. H. Hughes, St. Louis, Mo.
7. "Infantile Hemiplegia with Aphasia," Joseph Eichberg, Cincinnati, O.
8. "Retinal Excitation of Cortical Origin in Visual Hallucination," C. G. Chaddock, Traverse City, Mich.

WEDNESDAY, JUNE 8, 9:50 A.M.

1. "Electrical Execution," A. D. Rockwell, New York, N. Y.
2. "The Electrodes and their Application in Electrocution," Geo. E. Fell, Buffalo. N. Y.
3. "The Reflex Theory in Nervous Disease," L. Bremer, St. Louis, Mo.
4. "Reflex Genito-urinary Neuroses," G. Frank Lydston, Chicago, Ill.
5. "Three Phases of Para-myoclonus and the Use of Phonograph in a Case," Clark Gapen, Omaha, Neb.
6. "Nerve Regeneration after Suture," W. H. Howell, Ann Arbor, Mich.

WEDNESDAY, JUNE 8, 3 P.M.

1. "Syringomyelia: Our Present Knowledge of It," Landon Carter Gray, New York, N. Y.
2. "A Case of Syringomyelia," William C. Krauss, Buffalo, N. Y.
3. "Spinal Localization," Archibald Church, Chicago, Ill.
4. "Lateral Sclerosis, and its Treatment," W. H. Walling, Philadelphia, Pa.
5. "Heredity in Primary Degeneration of the Nervous System," Sanger Brown, Chicago, Ill.
6. "Surgical Interference with Cerebral Diseases of Childhood," Frank P. Norbury, Jacksonville, Ill.
7. "A Case of Tumor of the Pons in which Tapping of the Lateral Ventricles was done for the Relief of Intra-cranial Pressure," Theodore Diller, Pittsburgh, Pa.
8. "Neuralgia of the Abdominal Sympathetic," Harold N. Moyer, Chicago, Ill.

THURSDAY, JUNE 9, 9:30 A.M.

1. "The Relation of our Social Organization to Insanity," David Inglis, Detroit, Mich.
2. "Psychiatric Demography in Chicago," Jas. G. Kierman, Chicago, Ill.
3. "Insanity and Neuroses in Fiction," H. C. B. Alexander, Chicago, Ill.
4. "The Relation of the Paranoiæ to Society, and the Responsibility of the Civil Authorities for the Harm he Does," H. A. Tomlinson, St. Peter, Minn.
5. "A Case of Transitory Mania, with Peculiar Sequelæ," G. R. Trowbridge, Danville, Pa.

THURSDAY, JUNE 9, 3 P.M.

1. "The Law of Periodicity in Inebriety," T. D. Crothers, Hartford, Conn.
2. "*Insanity Following the Keeley Treatment for Inebriety*," Richard Dewey, Kankakee, Ill.
3. "Additional Evidences of the Somatic Origin of Inebriety," Eugene S. Talbot, Chicago, Ill.
4. "The Successful Management of the Alcohol Habit," C. H. Hughes, St. Louis, Mo.
5. "On Recent Judicial Evolution as to the Criminal Responsibility of Inebriates," Clark Bell, New York, N. Y.
6. "Delusions as to the Locality; a Frequent and Prominent Mental Symptom in Alcoholic Dementia," L. D. Mason, Boston, Mass.
7. "Some Recent Researches and Possible Investigations Regarding the Establishment of Personal Identity," Irving C. Rosse, Washington, D. C.
8. "*Angina Pectoris*," C. B. Mayberry, Danville, Pa.

FRIDAY, JUNE 10, 9:30 A.M.

1. "A Healthy Brain is Necessary to a Free Will," C. G. Comegys," Cincinnati, Ohio.
2. "Moral Insanity and Insane Morality," O. Everts, College Hill, Ohio.
3. "Feigned Insanity," F. W. Harmon, Carthage, Ohio.
4. "How Shall Responsibility be Measured in Criminal Cases," A. B. Richardson, Cincinnati, Ohio.
5. "Some Characteristics of the Human Mind when Placed at a Disadvantage; a Psychological Study," T. L. Wright, Bellefontaine, Ohio.

HAROLD N. MOYER, Chicago, Ill., *Chairman*.
G. R. TROWBRIDGE, Danville, Pa., *Secretary*.

SECTION ON ORAL AND DENTAL SURGERY.

The officers of the Section of Oral and Dental Surgery are Professor J. Taft, Cincinnati, Chairman; Eugene S. Talbot, Chicago, Secretary.

The following essayists and essays have been secured:

1. Dr. J. Taft.
2. Dr. H. Gradle, Chicago. "Experiences in Empyema of the Maxillary Sinus."
3. Dr. G. S. Junkerman, Cincinnati. "Oral Manifestations in Metallic Poisonings."
4. Dr. John L. Gish, Jackson, Mich. "Diseases of the Gums."
5. Dr. T. D. Crothers, Hartford, Conn. "On Diseases of the Teeth and Jaws in Inebriates."
6. Dr. J. Smith Dodge, New York. "The Local and General in Dental Pathology."
7. Dr. G. Lenox Curtis, New York. "Restoration of Sight following Operation for Necrosis of the Sphenoid Bone."
8. Dr. W. C. Barrett, Buffalo, N. Y. "The Condition of the Dentine in Pulpless Teeth."
9. Dr. M. H. Fletcher, Cincinnati. "A Universal Mento-Dental Splint, with Report of Case."
10. Dr. E. S. Talbot, Chicago. "Arrest of Development and Decalcification of the Enamel and Dentine."
11. Dr. John S. Marshall, Chicago.
12. Dr. G. W. Weld, New York. "The Treatment of Anæmia by a New Preparation of Iron, illustrated by the Hæmoglobinometer."

Others have signified their intention to write papers, and their subjects will be announced in the next number.

THE AMERICAN MEDICAL ASSOCIATION.

Next month the annual meeting of this great Society will be held in Detroit. We urge upon all the importance of attending. Of this Association it can be said more truly than of any other, that it is of our profession, for our profession, and by our profession. Its growth and prosperity have been continuous till now it stands first in authority and place in all America.

With all of its grand record it is more than ever needful that its friends should be solicitous. Success in the past does not of itself insure success in the future. Those who depend upon the *vis a tergo* will soon be minus momentum, and those who are satisfied by membership in, and casual attendance upon, the American Medical Association without individual effort, will contribute largely by neglect, to its failure.

What is needed now more than ever is work, downright, upright, honest, intelligent work. If we are not careful, the many special societies will sap the scientific strength of the Association in no small degree. They are well organized, are not unwieldy and hold out inducements to the best men in the several departments. They are all of them, worthy organizations and possibly one of their best results may be to make the workers in the American Medical Association more earnest and effective.

If the time should ever come when the best scientific work should be done mainly in special societies, it will be the fault of the present membership of the A. M. A. There is no grander medical organization on earth, and each Section is representative if rightly conducted. The loyalty of every reputable physician to his profession may well be called in question if the interest in the Medical Association is in any way permitted to lapse.

We do not greatly fear this, however, for already upon the horizon are the indications of renewed life and strength. The medico-political member has been branded. Combinations in and about the nominating committee are better understood. The itch for office is fast disappearing under proper local treatment. Even the most obtuse are beginning to understand that better is he who readeth a good paper than he who secureth only an office.

We would again urge upon all who can, to go to Detroit and join hands with those who are endeavoring to increase the usefulness of the different Sections. The very foundation of the Association is the scientific work done in these departments, and this work must not be hampered either by indifference or by barter and sale of "the push and the pull" in the rush for place.

We would like to see the rule adopted and enforced that no man should hold an office either in a Section or in the general Association, until he has shown some personal interest in the scientific work of the Association. An office in a medical society should be desired because of the opportunity it gives for serving the best interests of the society, and not because of personal advancement.

Membership in the American Medical Association is in itself a high honor. Having attained that, let each one endeavor to make that membership more valuable, and to do that, he must do all he can to help along the legitimate work of the Association.

We understand that the physicians of Detroit, under the leadership of Dr. Walker, the Chairman of the Committee of Arrangements, with the aid of the State Society, are making preparations for a grand meeting. They must not be disappointed.—*Clinique, May, 1892.*

DOMESTIC CORRESPONDENCE.

"The Leprosy Question."

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

In your issue of May 14, Dr. D. C. Newman, referring to my paper on "The Leprosy Question," states that had I followed up Dr. Arning's researches I "would have learned that Dr. Arning made many cultures of the germ as early as 1884. So this is anything but a new discovery."

The reference to be drawn from this statement is that it is a well-known fact, and has been since 1884, that the germ of leprosy is susceptible to cultivation.

That Dr. Arning has attempted to cultivate the bacillus lepræ I am well aware, and I am also cognizant of the fact that others have claimed to have done so. But these claims have not been accepted by the scientific world as final, for their cultures have not been proven to be *pure cultures.*

If I am ignorant of Arning's work and its results, I am surely in good company, for on April 30, 1890, Professor Virchow (*La Revue Médico-Pharmaceutique*), in formulating certain conclusions regarding leprosy, took occasion to state that "attempts to cultivate the bacillus outside the human body have so far been attended with negative results. Animal inoculations furnish no positive data."

But the foregoing reference is unnecessary, as Dr. Arning speaks for himself in a letter to the secretary of the Leprosy Investigation Committee (No. 2, p. 117): "I feel positively sure that before long, somebody or other working in this direction will succeed in raising pure cultures of the bacillus lepræ, and in studying its biology and chemical relations. There is no difficulty whatever in growing it profusely by simply letting pieces of leprous tissue macerate and decay in ordinary water at ordinary temperature, giving but sufficient time (several months); but the resulting growths are not pure cultures in strict sense."

We see from this quotation that while Dr. Arning states that he has been growing leprosy bacilli in an imperfect way, he frankly acknowledges that *"the resulting growths are not pure cultures in strict sense."*

It goes without saying that in speaking of the discovery of the British Committee, I meant the discovery of a way to make *pure* cultures, for those that are not *pure* can be of very little use to the experimenter.

In closing, let me say that it has not been my intention to cast any reflections upon the very meritorious researches of Arning and others in this interesting work, but simply to present the bare facts in the case. Respectfully,

HENRY WM. BLANC.

Malarial Fever.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Having been in St. Augustine, Fla., in April, when the cases of so-called typhoid fever to which you refer in THE JOURNAL of the 7th inst. were under treatment, I am able to say that your doubt whether they were cases of genuine typhoid is fully justified. I saw none of them personally, but from statements made to me by the local physicians it is plain that they were simply cases of the common malarial fever of the country, occurring in persons of feeble constitution, and presenting typhoid symptoms in their final stages.

It is stated that the number of persons traveling for health and pleasure in Florida during the past season has been greater than ever before, and it is not strange that in the hotels crowded by these visitors malarial fever of a severe type should have declared itself. But every one knows that the specific malaria in which that fever has its origin is quite different from the poison of typhoid, and there is no reason to suppose that these cases were due to defective sewerage. Moreover, I was for several days at the Hotel Cordova, and could discover nothing which would lead me to suspect the sewerage system of this and the other great Flagler hotels to be any less perfect than the plans of the architect promised.

The fact is, that a great part of Florida is still virtually a new country, and no unacclimated traveler can go everywhere, through its swamps and forests, without danger, especially if he is in feeble health. Its winter climate is much more equable than that of southern France and Italy, and its mild sea-breezes, both from the Ocean and the Gulf, are very different from the chilling mistral which so often prevails on the shores of the Mediterranean. Nor is it difficult to find proper places for a winter residence in this nearly perfect climate, or to reach them without danger from malaria of any kind. Only let it be remembered that travel in Florida for its own sake should be strictly forbidden to invalids. L. A. Tourtellot, M.D.

Utica, N. Y., May 14, 1892.

Widows and Orphans of Medical Men.

To the Editor of the Journal of the American Medical Association:

In the issue of the Journal for April 16, is an interesting communication from Dr. F. Horner, of Marshall, Va., which, however, is somewhat in error in certain respects. I refer particularly to the statements concerning the New York Society for the relief of the Widows and Orphans of Medical Men. This society is entirely distinct from the Physicians Mutual Aid Association, having been founded May 14, 1842, and being patterned after a similar organization in London which is now nearly or quite a century old. The objects of the society are stated in its rather long name, and it has also upon certain occasions extended relief to its members. Its fiftieth year of existence will be completed this week. Its relief work has extended through forty years and during that period it has aided 27 widows and 23 orphans of members, and has disbursed among them $99370.31.

It has invested funds amounting to $178,150.28, and has never lost a dollar of the money which has been entrusted to its care. Its funds have been derived almost entirely from its members, and it now has upon its roll of annuitants 11 widows and 3 children.

Its annuitants have received relief for periods varying from 1 to 30 years. Five of those who are still receiving relief have been annuitants respectively 11, 13, 16, 20, and 30 years.

A widow who is without income receives an annuity of $400 per year, each orphan boy under 16, and each orphan girl under 18, receives $100 per year. Yours truly,

Andrew F. Currier, M.D., Secretary.

New York, May 9, 1892.

NECROLOGY.

Dr. Charles Fremont Clark, of Brooklyn, died April 21, in his thirty-sixth year. He was a promising young man, with a liberal training and an interne's experience, who was called upon to lay aside life's duties after about eight years of arduous participation therein. An anatomical abnormality accelerated the fatal issue of a chronic inflammation of the appendix vermiformis, which might have been in abeyance for some time to come, as it had already been for months, if not years. The malformation consisted in a deficient development of the mesocæcum; to that extent was it deficient that the caput coli was permitted to swing or float outwards to the left side. The appendix was the seat of a concretion and chronic inflammation, and this had been aggravated or converted into an acute appendicitis. This latter condition, it is thought, might have been delayed considerably, and possibly indefinitely postponed, save for the adverse influences superadded by the floating caput coli. The almost undescribed complications, which progressively endangered this young physician's life, were not suspected during his life. The strange facts were only made known by autopsy. For eight years past the patient had treated himself for malarial infection. During the last week of his life, only, did he seriously seek for medical counsel. In that week his bodily temperature, at times, rose to 106° and over, and the abdominal pains became so much more marked that the sick man felt that a typo-malarial fever had been grafted upon his long-standing paludal troubles. In this view, the consultants seemingly concurred. The pathologist who made the post-mortem is reported as saying that the result of the examination leads him to believe that there was no probable means of obviating the fatal issue. It cannot properly be said that there was an error in diagnosis on the part of the attendants, for they could not look into the recesses of their patient's body; and there is not basis of knowledge sufficient to build up a hypothesis of anomalous development in a person of the age of Dr. Clark. The loose caput coli is very rarely met with, and still more rarely has it been seen to suddenly precipitate so grave results, acting as the chief cause of trouble.

Dr. Clark was a native of Wheeling, West Virginia, having been born there in 1856. His literary education was obtained at the Washington and Jefferson College, graduating there when he was twenty-one years old. He graduated in medicine at the New York College of Physicians and Surgeons, in 1883. He served as house physician of the Brooklyn Hospital for a year after his graduation. He was unmarried.

MISCELLANY.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 7, 1892, to May 13, 1892.

Col. Joseph C. Baily, Surgeon U. S. A., is granted leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Dept. of Texas.

First Lieut. William E. Purviance, Asst. Surgeon U. S. A., is relieved from duty at Ft. Riley, Kan., and will report in person to the commanding officer, Jefferson Bks., Mo., for duty at that post.

First Lieut. Francis A. Winter, Asst. Surgeon U. S. A., is relieved from duty at Jefferson Bks., Mo., and will report in person to the commanding officer, Ft. Riley, Kan., for duty at that post.

First Lieut. William F. Lippitt, Jr., Asst. Surgeon U. S. A., upon being relieved from duty at Ft. McPherson, Ga., will report in person to the commanding officer, Camp Eagle Pass, Tex., for duty at that post, relieving First Lieut. Ogden Rafferty, Asst. Surgeon U. S. A. First Lieut. Ogden Rafferty, on being relieved by First Lieut. Lippitt, will report in person to the commanding officer, Alcatraz Island, Cal., for duty at that post.

Major David L. Huntington, Surgeon U. S. A., is relieved from duty in New York City, to take effect on the final adjournment of the Army Medical Board, and will then proceed to Los Angeles, Cal., and report in person to the commanding General, Dept. of Arizona, for duty as Medical Director of that Dept., relieving Col. Joseph R. Smith, Surgeon. Col. Smith, on being relieved by Major Huntington, will proceed to San Francisco, Cal., and report in person to commanding General, Dept. of California, for duty as Medical Director of that Dept.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending May 14, 1892.

Surgeons H. J. Babin and M. C. Drennan, ordered to Naval Academy, to examine the physical condition of candidates for admission to Naval Academy.

P. A. Surgeon Clement Biddle, ordered to Marine Rendezvous, Philadelphia, Pa.

Surgeon H. C. Eckstein, detached from Marine Rendezvous, Philadelphia, Pa., and wait orders.

Surgeon Howard Wells, ordered to the training ship "Portsmouth."

Asst. Surgeon James Stoughton, from the "Portsmouth," and to the "Constellation."

P. A. Surgeon E. H. Marsteller, from Naval Academy, and to the "Constellation."

Asst. Surgeon James G. Field, granted one year's sick leave.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending May 7, 1892.

Surgeon P. H. Bailhache, detailed as chairman of Boards for physical examination of candidates for promotion and appointment, Revenue Marine Service. April 26 and May 3, 1892.

Surgeon F. W. Mead, detailed as chairman of Board for physical examination of candidates for appointment, Revenue Marine Service. May 5, 1892.

P. A. Surgeon P. C. Kalloch, to proceed to Providence, R. I., on special duty. April 29, 1892.

P. A. Surgeon J. J. Kinyoun, detailed as recorder of Board for physical examination of candidates for appointment, Revenue Marine Service. May 5, 1892.

Asst. Surgeon J. B. Stoner, ordered to examination for promotion. April 20, 1892.

Asst. Surgeon C. E. Decker, detailed as recorder of Boards for physical examination of candidates for promotion and appointment, Revenue Marine Service. April 26 and May 3, 1892.

Asst. Surgeon C. H. Gardner, to report to commanding officer, Revenue Steamer "Rush," for duty. April 18, 1892.

PROMOTION.

Surgeon W. A. Wheeler, commissioned as Surgeon by the President, April 20, 1892.

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ORIGINAL ARTICLES.

FATTY AND FIBROID DEGENERATIONS. BRIGHT'S DISEASE, APOPLEXY, FATTY HEART, PUERPERAL CONVULSIONS, CATARACT, ETC.

BY EPHRAIM CUTTER, M.D., LL.D., AND JOHN ASHBURTON CUTTER, M.D.,
OF NEW YORK.

INTRODUCTION.

Space does not warrant more than a consideration here of fatty degeneration, somewhat in detail, with *a short notice of fibroid degeneration; indeed, the* explication of the first is none too full when the importance of the subject is noted. This medical contribution is contrary to the somewhat conven*tional pathology whose nomenclature* ends in "itis."

THE FATTY DEGENERATIONS.

General Principals.—Fatty degeneration is where tissues that are normal parts of organs are replaced by fat in its many forms of oily, lardaceous, waxy, glassy, atheromatous, soapy and crystalline bodies. For example: *a.* When the muscular tissues of the heart are more or less changed into fat, it is fatty degeneration. *b.* When the circular muscular fibres of the arteries, the terminals of the arteries and the capillaries, are changed into cholesterine, it is fatty degeneration. *c.* When the kidneys are more or less changed into fat, it is fatty degeneration. *d.* The periphery of the cornea. *e.* The crystalline lens. *f.* The liver. *g.* The brain substance. *h.* The spinal cord. To name no more.

a. Is known as fatty heart. *b.* As apoplexy. *c.* As Bright's Disease, one form of. *d.* Arcus senilis. *e.* Cataract. *f.* Fatty liver. *g.* Softening of the brain. *h.* Some forms of locomotor ataxia, spastic paralysis, etc. All of these are local manifestations of a general cause invited by a less power of resistance in the organs affected. It has been said we are born with each one of our organs or systems endowed with a certain amount of force or dynamos to do its work in life. This is what we call constitution. One born with a good constitution is one born with a liberal supply of vital dynamos and *vice versa.*

A weak part of the body or a machine is liable to get out of order the first of all. This principle may explain why, in different individuals, the heart is afflicted with fatty degeneration in one—the brain in another, the kidneys in another and so on. Though in bad cases the degeneration may attack all the organs in time, if the causes are kept up long enough.

Another definition of fatty degeneration—(Micrographic Dictionary, 1883, p. 237): "The abnormal deposition of free fatty matter in the histological elements of animal and vegetable bodies. When, from *whatever cause, the normal functions of the morphological* elements of a tissue—cells or the secondary deposits formed in them—become languid or interrupted, free globules of fat or oil become deposited in them; and as this fatty matter increases in amount, *the tissue loses, to a greater or less extent,* its natural and physical properties, hence, it is said to be in a state of fatty degeneration. The discovery of fatty degeneration of tissues is probably one of the most *valuable fruits of microscopic study in regard to medical science*; for it has been shown that maladies supposed formerly to arise from too great an abundance of the circulatory fluid, have really had their origin in a decayed state of the tubes or vessels in which the fluid was contained, and that the *natural process of* human decay, as it is called, is a morbid process or disease, probably to a certain extent as remediable or preventible as many other diseases to which man is naturally liable. Here is indeed a matter of great interest." "In addition to the deposition of fat within the elements of a tissue undergoing fatty degeneration, amorphous, finely granular proteid matters are sometimes found. Occasionally also brown, yellow, red or black" (aniline blue or emerald green, E. Cutter), "granular or massive pigment is met with (pigmentary degeneration), together with amorphous or crystalline calcareous salts, as the carbonate or phosphate of lime (calcareous degeneration); sometimes the fatty matter is crystalline; it then generally consists of cholesterin" * * * "fatty degeneration is intra-cellular and inter-cellular of glands, of vessels, of muscles, of exudative corpuscles, of inflammatory deposits."

General Principles as to Causation.—Acute fatty degeneration is produced in poisoning by phosphorus. In a case where a man died in twenty minutes (a suicide) the muscular fibrillæ of the heart and the tissues of the kidneys were shown to me at Harvard medical laboratory in a state of fatty degeneration. This was truly acute. It is almost impossible to conceive of such a rapid transformation, but the following conversation with Dr. B. W. Richardson, F. R. S., held in London by the writer in 1889 shows more rapid action:

Artificial Synthesis of Cataract by Sugar.—"Dr. Richardson, was it true that in your experiment where a teaspoonful of a saturated watery solution of common sugar injected under the skin of a frog or guinea pig produced cataract in both eyes in twenty minutes?" "Quicker than that," said he, "it was less than ten minutes, and many other things besides will produce cataract as quickly." Now cataract is a fatty degeneration. The German oculists say so, and I have satisfied myself by the microscope that this is so. In 1876 I took micro-photographs of cataracterous tissue which clearly showed their fatty character.

Another general cause is want of exercise, producing a languid or interrupted circulation. It is well known that horses not exercised soon deteriorate and become useless. I knew an instance where a wealthy gentleman bought a fine span, which ran away and threw him out so that he struck his back against a post on the sidewalk. The horses were not used after that nor exercised, and in less than three months were good for nothing. The horsemen told the writer that their muscles were turned into fat. (The injured owner never fully recovered, died a year or two later of fibroid kidneys, as found on examination after death.)

Partial Paralysis is another general cause of fatty degeneration.—It may be on the principle of disease as seen when a person is paralyzed on one side of the body from the rupture of brain blood vessels, whose transverse muscular coats have been fattily degenerated. Thus weakened they have yielded to the normal arterial pressure and allowed the blood to escape, as a decayed lawn hose pipe allows the water to escape through its sides because the rubber has lost its strength. Muscles must have exercise to retain their normal condition. This is one secret of the benefits of massage.

Food of certain kinds is a general cause of fatty degeneration, because its constitution is such that it turns tissue into fat, and because the gases produced by it in the alimentary canal cause paralysis by absorption as said by some, and hence results devolution into fat from the languid or interrupted circulation. The production of carbonic acid, sulphydric acid, ammonium sulphide, and other gases in the alimentary canal is probably the most prolific cause of fatty degeneration, as people will eat foods that produce these gases, because they look good, taste good and smell good.

Physical injuries may produce fatty degeneration in animals as they cause fatty and starchy degeneration in the protoplasm of the body cells of apple substance. This I have noticed in studying rotten apples. Taking a yellowish part of an apple, which appeared to be rotten, but which really was the result of an injury to the apple by a blow or by a flattened surface by pressure, as seen when the head of an apple barrel has compressed the apples, I have found not only fats but more abundantly grains that give the iodine tests of blue.

Sometimes the starch was so abundant as to make the apple substance hard and uncrushable under the glass cover of the microscope slide. These bodies had every appearance of the so-called amyloid bodies that are found in the urine, in the brain substance, and elsewhere in the human body. In the apple the protoplasm of the substance cells was clear, glassy, and transparent. Evidently the injuries done to the apple substance by violence lowered the vitality of the cell contents and it may be, paralyzed them so that as a result the amyloid bodies were formed. At any rate they were not found in the uninjured cells.

Paralysis is one result of injuries, and the withdrawal of nerve force by the application of cold.—In the softening and breaking down processes of decaying vegetable substances, there must be retrograde development (dissolution) and a lowering of vital processes.

Amyloid degeneration is often seen in the fatty degeneration of the kidneys. Indeed the writer is inclined to think that it is the first step in the process of fatty degeneration. And hence, when amyloid is found, it is to be looked on as a fore-runner of fatty degeneration and should be treated as such.

Amyloid, like starch (amylum). Name was given by Virchow to bodies that look like starch grains found in tissues and organs, the brain, liver, kidneys, breasts, spleen, lymphatic glands and small arteries undergoing waxy or lardaceous modification of fatty degeneration.

It is colored a deep reddish brown by iodine. Amyloid is found in the cotyledons of certain Leguminosæ as the tamarind, haricot bean, etc. Vegetable amyloid is colored blue by iodine. (Micrographic Dictionary.)

The liquifaction of fat found in the urine and underneath the skin should be looked upon as a form of fatty degeneration. Certainly it is not healthy to have liquid fat in masses, more or less large, present in the urine or in the blood, coming from the fat that underlies the skin. The sub-dermal fat should be strong enough to hold its normal shapes and not coalesce in drops more or less large, by the squeezing from the punctures made in the skin to procure the blood for a microscopical examination.

In all these cases care should be taken lest there are sources of error, and foreign oil has come from some other source than the human body.

Is fatty degeneration ever a normal process? Yes. It occurs in the normal sub-involution of the uterus. Here the organ just after birth is as large as a child's head, but it has to come down to an organ about three inches in length and two in width at the fundus. I have examined the lochia from a uterus undergoing this process and found a beautiful example of degeneration by turning into fat. It is difficult to say whether this is an example of evolution or devolution, *i.e.*, an evolving up to a higher position or devolution downwards to a lower. But probably sub-involution is the best term to indicate a restoration downwards to a normal size and shape of the uterus after its work of developing a new-born is over.

Another instance of normal fatty degeneration is in the Graafian vesicles; the walls of the vesicle weaken so that the mature ovum escapes. Another is the corpora lutea, which is found in the Graafian vesicle cavity after the ovum has escaped.

In the epithelia of the liver to a moderate degree—in excess it is a diseased fatty degeneration. In the mammary glands and the ceruminous glands, in the intestinal epithelia during digestion, in the marrow, underneath the skin and in the interstices of the body fat is normal.

These are the only instances where the production of fat or fatty degeneration is normal in the animal body unless we include the *fatty degeneration of tissues by old age*. Here again we find an analogue in the vegetable kingdom. On one occasion I heard a sermon on the text "We all do fade as a leaf." It was in the fall season. After the sermon I went home to the house of the preacher, who remained behind to attend Sabbath school. At his study window stood an apple tree with unchanged leaves, and near by a maple tree with leaves fading in the gorgeous apotheosis, which New England people so well know when the leaves of maple and other trees die in a blaze of glory from old age and not from frost.

Now, thought I, was a chance to see how the leaves fade, and to encourage the preacher in his admirable comments on the text. So I took the microscope and found in the substance of a gorgeous maple leaf the chlorophyll changed into fat in globules and amorphous granules, and a cross-section of the stem of the leaf showed the lumen of the stem ducts to be impinged upon by a clear glass-like deposit, lining the walls and forming another tube within, so as to materially interfere with the supply of sap from the roots and trunks. This diminution of supply might account for the fatty degeneration by the withdrawal of the normal amount of nourishment lowering the vitality of the protoplasm of the cells of the leaf substance, and so I showed it to the clergyman, Rev. D. O. Mears, D.D., of Worcester, Mass., and told him that our fading like a leaf was realistically true—that both leaf and we faded by fatty degeneration, and that to grow old gracefully and die at the legitimate time, is an apotheosis of glory like the leaves in question, and that a process of death was a process of life, as mentioned before in the sub-involution of the parturient uterus.

The production of fatty livers of geese as a gourmand's delicacy, practiced in Sharbough, is another example of fatty degeneration by feeding, and is well known to all students of physiology as *pâte de fois.* In the recent reports of some cases of hepatic surgery on gall stones where there was trouble from the friability of choledochal structure and the gall bladder "tore all to pieces in spite of the care used"—there must have been a fatty degeneration caused by food, for no boy ought to have gall stones, which are merely an aggregation of fat acids and compounds of cholesterin, unless he has been having improper feeding which has accumulated these very abnormal bodies. This leads to some general remarks on

ATHEROMATOUS ARTERIES.

Atheroma is a Greek derived word signifying meal; it is applied to tumors and the degeneration of the muscular and other coats of arteries, which degeneration sometimes deposits on the lining membrane, rough feeling masses which flake off leaving hard and thin patches of whitish deposit which roughen the arterial coats, and interfere with the circulation. I have known this deposit to be made up of cholesterine crystals in plates, irregular, oblong and with re-entrant angles. It is one of the fat series of crystals. It is found in the blood. A late contribution to the knowledge of atheroma was published by a German physician who was the president of a vegetarian society, but who gave up his position and vegetarianism when he found that his temporal arteries were becoming atheromatous at 40 years of age. A rigid artery, he affirmed, meant death. According to this and other observers, vegetable food helped to cause this deposit of atheroma. It is probably so with the calcareous deposits in the coronary arteries of the heart as found in *angina pectoris*, mixed with lime or soda salts. At any rate these deposits interfere and cut off the supply of blood to the heart which should come through the coronary arteries, and may be and probably is one cause of the fatty degenerations of the heart, as we see in the obliteration of the ducts in the stem of a maple leaf connected with the fatty degenerations of that leaf.

SPECIAL PRINCIPLES. APOPLEXY AND RESULTANT PARALYSIS.

When fatty degeneration affects the circular muscular fibers of the arteries of the brain, the latter become weakened and sometimes give way to the normal (oftener to the abnormal) pressure of the heart and allow the blood to escape into the adjoining brain tissues. These being more or less soft and yielding, are forced away until the resistance is enough to balance the arterial blood pressure. Outside of the arteries the blood coagulates into a clot which also exerts a sealing process against the escape of more blood. Hence it is that people with apoplexy do not always die. Sometimes the blood will flow into the ventricles of the brain and form large clots, which, if the patient lives long enough, are partly absorbed, as in a case occurring nearly 30 years ago. About nine months before death, she had left lateral facial paralysis, of which she was gradually recovering, when she suffered another hæmorrhage into the right ventricle, filling it completely, and which ended her life in a few days. The autopsy revealed the above facts. She was completely paralyzed on the left side of the body but retained memory and consciousness. This seemed to be due to the fact that the clot was central and not peripheral. This case had fatty heart, kidneys and liver, and the brain was softer than normal. The kidneys were not developed beyond the size of a child six years of age. Her history showed that she had nearly died of scarlet fever at that age.

Serous apoplexy is a form of apoplexy where only the watery parts of the blood escape into the brain tissue, but this we shall not consider here.

If the brain hæmorrhage comes near the respiratory nerve center or the origin of the pneumogastric nerve the patient dies as if receiving a blow from a club, hence the ancients called the attack a *stroke* as from a club (i.e. *apo* from, *plessein* to strike), and this is the popular idea of to-day.

The Science of Medicine needs rewriting in this respect, and the disease should be put down as merely one of the local manifestations of a general diseased condition, i.e., fatty degeneration.

Some think that obesity is a sign of impending apoplexy; not always. Lean people have fatty degeneration. Remember the definition here given, that this means fat replacing other healthy tissues. It is not fat deposited outside of an organ. Fat is essential for many purposes in the healthy economy—to cushion the skin, fill up spaces between the muscles, cushion the eyes, act as a non-conductor of heat, to name no more.

It has been shown that the liver will change beef into necessary amount of fat in certain cases that need such food alone and nothing else.

It is sad to see distinguished men in the height and glory of their usefulness cut down at once as with a blow from a club simply because they have fed improperly. One feels it is impossible to refrain speaking out his belief, so that such cases should be less common, as one would cry out if he saw men drowning, simply because people could not or would not appreciate the situation. The point to be enforced further on is that apoplexy and the resultant paralysis, comes from eating starches and sugar in excess as a primal cause.

Society food ethics are governed by the æsthetics of taste and sight altogether too much. It will be better for the race when it becomes fashionable for the animal, man, to feed as other animals are fed, with a view to health and usefulness and not because the food looks good and tastes good.

The *diagnosis of impending apoplexy* is possible by morphological examination of the blood.

BRIGHT'S DISEASE OF THE KIDNEYS.

This is one form of fatty degeneration. It is thought by many that albumin in the urine is an infallible sign of Bright's disease. But while we may have albumin in the urine without Bright's disease, it is true that it is one factor in the diagnosis. Another factor is the presence of casts of the kidney tubes.

By casts are meant bodies which are moulded forms of the tubes, as a candle is formed by the mould. In other words, albumin, fatty matter, lardaceous and hyaline matter is poured out of the blood into the tubes of the kidneys, coagulate and form casts of these moulds or tubes, and which sooner or later separate and are found in the urine. Casts make *factor two* in the diagnosis of Bright's disease. Another factor is the presence of fatty epithelia from the kidneys; that is when fat in the form of minute globules invades the kidney epithelia. In the intestinal epithelia this would be a normal process during digestion. Fatty epithelia make *factor three* in the diagnosis. When in a given case are found all three factors together, then in my opinion the diagnosis of Bright's disease is complete. To be sure, I found a case where fatty epithelia were very numerous and large, and on studying the urine for several consecutive days afterwards, I found the albumin and the casts, but when the case went on diet it improved rapidly, the three factors disappeared and the case is now well. It seemed to me that I was dealing with a case of Bright's disease in its beginning. So also has a late case of petit mal (epilepsy) which showed a great abundance of casts without the albumin or epithelia, though they were discovered later, separated from the casts. It is said to be possible to have Bright's disease without the above three factors, as a late autopsy proved, according to the report. Still we think that if the reporters had studied the urine *daily for months* the factors named would have been found. It is a great mistake *not* to examine urine daily for a week at least. I once knew a good country doctor to send a case of albuminuria to consult with an urban practitioner, who found no albumin, and cast rather disparaging reflections on the rural one. Both were right as to presence and absence of albumin, but both should have remembered that albumin comes and goes, especially in cases of catarrh of the spermatic ducts.

Some think that the essence of the kidney trouble is in the arterial fatty degeneration—possibly so—but it is fatty degeneration all the same, which is the point here sought to establish. Some think the kidneys degenerate fattily from overwork. But they are made to work incessantly through life. In my opinion the fatty degeneration comes from the *food* and *food chiefly*. The reason is that I have seen many cases where the signs of Bright's disease have been removed and health restored by means of a diet that excluded fat producing food, *i. e.*, starches, sugar and other carbohydrates. In other words, give Nature a diet that excludes fat forming food in abundance, to support life and she will stop of herself the destructive breaking down and systemic disintegration of tissue by fat, other things being equal.

BRIGHT'S DISEASE AND PUERPERAL CONVULSIONS.

Puerperal convulsions in which the urine presents the three factors named must, I think, be cla with Bright's disease.

Of course the uræmic poisoning should not be forgotten, but so long as cases of convulsions have occurred in men sick with Bright's disease, which, if they had been women in, or just after labor, would have been called puerperal convulsions, it must be admitted that Bright's disease and puerperal convulsions are practically the same thing for treatment. We quote the case noted under apoplexy again.

She had puerperal convulsions with her second child, and afterwards with her third, a fœtus of six months. The post-mortem in her case showed conclusively Bright's disease of the kidneys, so that in her case the puerperal convulsions and Bright's disease coëxisted.

In another case (a primipara) there were *post partum* puerperal convulsions along with the triad of factors in the urine of Bright's disease: Albumin two-thirds, fatty epithelia and kidney casts, with signs of cerebral hæmorrhage, right hemisphere. The placenta was small and one-third of its substance was occupied by oval, yellowish, smooth, hard and stony tumors. I thought them cancerous but th[illegible] microscope showed them to be made of concretion of cholesterine, re-entrant angledcrys tals, complete including the placental tufts, and most of the cholesterine crystals had their long diameters parallel with the long diameters of the tufts.

These two cases, it seems to me, sufficiently illustrate the connection of fatty degeneration with puerperal convulsions.

At the risk of repetition it may be said that the latter case was put on to the liquid beef essence in full doses. The bowels were moved by cream of tartar and jalap. Consciousness returned after three days.

The albumin entirely disappeared within ten days time—the fatty epithelia and casts were longer in going. There was left facial paralysis for th[illegible] years. The child weighed 3½ pounds at birth and is now eleven years old. The mother has developed into beautiful womanhood. Medical gentlemen who saw her in consultation, gave no hope of her recovery; but for beef she must, humanly speaking, have died. She has borne two children since then, both of them healthy.

BRIGHT'S DISEASE OF THE LUNGS.

The late Dr. Louis Elsburg, of New York, whose early death we do not cease to mourn, told the writer there was such a disease recognized by German authorities but not by Americans. They are rare; they come in with the general fatty degeneration of the kidneys sometimes.

The lungs may break down, and cavities form; there may be copious hemoptysis, gravelly sputa as in fibrous consumption, and yet no *morphology of consumptive blood* which should be present in ordinary tuberculosis of the lungs. The following is a case: I was called to Mrs. Blank, aged about 25 years, childless, residing in Connecticut, with instructions to look up her case as consumption. I found her very sick in bed, weak, coughing; occasional hemoptysis more or less profuse, sputum copious, containing beautiful crystals of the triple phosphates of ammonia, lime and magnesia, physical signs of cavities in left lung, upper third. Heart feeble and enlarged, valvular sounds normal. The urine was highly albuminous and had fatty epithelia and casts in abundance. (I learned that none of her previous medical attendants had examined the urine, though their services as consultants had been paid ($600) six hundred dollars by the month. Satisfied with the chest symptoms they neglected the urine. I hope no reader of this will ever make such an omission in any of their chronic cases, at any rate I will not allow myself to do so.)

The blood had a less proportion of corpuscles to the serum than normal. Fibrin filaments not too much developed. The red corpuscles and the white and the serum were not as they should be in tuberculous blood. These things determined the diagnosis of Bright's disease of the kidneys and lungs, and no consumption. The patient was too far gone to respond to treatment and died. No autopsy.

When we consider that there are muscular fibers in all the bronchial tubes, about the same as in the arteries, and that so-called asthma is when there is a spasmodic contraction of their muscular fibers, it is probable that they undergo fatty degeneration as the like muscular fibers do in the arteries when the system is deluged with fat producing food.

It may be that the rarity of fatty degeneration of the lungs is due to the elastic nature of the lungs, and the close connection with the air that permeates the whole of the lung tissue, giving rise to physical changes of endosmose and exosmose which keep up a lively and unimpeded circulation. Still the frequent presence of pigmental degeneration, as shown by bronze, black, aniline blue, emerald green, amorphous and massive crystals in the sputum, shows a tendency to fatty degeneration of the lungs. Also, as fibroid degenerations are partly due to a sluggish and imperfect circulation, and is found in the lungs much oftener than is supposed, it may be that if the morphology of consumptive blood was generally understood and used, that more cases of fatty degeneration of the lungs would be known. When things are unsuspected they are not apt to be looked after.

THE NECESSITY OF PHYSICIANS' AID ASSOCIATION.

BY JOHN S. ROBERTS, M.D.,

PRESIDENT OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

The Directors have put me upon the program to address you upon the necessity of mutual aid associations, which shall render assistance to disabled physicians and to the families of physicians who have died without leaving provision for their wives and children. It is scarcely possible that any physician here to-night is unacquainted with the urgent need for such an organization; but there are those present not of the profession who may be surprised to hear that the practice of medicine is not a lucrative vocation. No one can begin the practice of medicine without having spent a good deal of money in obtaining his technical education; nor, can he begin his work until he has at least reached his manhood. Those entering upon a commercial career can earn a certain amount of income, even though it is small, before that age. A young doctor, moreover, starts in life burdened by the cost of the necessary books and instruments. Then, too. the doctor has to keep up the appearance of success, for few will employ a physician who wears shabby clothes, and has a dilapidated home, showing upon the surface his inefficiency. Is one likely to employ a physician who is known to have few patients? A feeling of charity may occasionally impel a man to employ a mechanic who is in need of work, but few of us would place our bodies in the care of a doctor evidently trusted by few clients. Thus it is that the necessity of maintaining decent appearances prevents on the part of a doctor that economy which in other cases is so commendable.

Another contributing factor to the limited income of a physician is the fact that practically all the work must be done by his own hands and brain; he cannot appoint clerks to assist him or delegate the routine business to another. The sick man who calls a physician wants the physician for whom he sends, and will accept another only grudgingly and but for a short time. When we consider that the day is but twenty-four hours long and that much of this time is needed for sleep and refreshment, we appreciate the impossibility of one person carrying a large business without help. Then, also, the sense of propriety prevents a physician publishing a claim to superior ability in the manner permissible to merchants calling attention to the goods which they have for sale.

I was recently struck by the provisions of the Corporation of Barber-Surgeons in London, which, in 1307, forbade its members putting blood in the windows as an advertisement of their skill. This shows the objection to professional advertisement even in those early days. It holds good in the present time, for of little professional standing are the dentists who put extracted teeth in their windows; or of doctors who fill their windows or offices with tape-worms and tumors preserved in bottles of alcohol.

The public does not realize the fact that the physician cannot avoid doing a great deal of professional work for which he never receives compensation. No educated man is so directly and personally employed by the very poor. The clergyman in administering to the poor of his parish receives an indirect recompense from the wealthier class of parishioners who pay his salary. The doctor, however, is directly employed by the indigent, from whom he must receive his fee if he is paid at all. The result is that the professional remuneration received from the poor is totally inadequate for the services done.

Sir James Paget, in investigating the subsequent career of graduates of one of the London Medical Schools found that twenty-five per cent. of them had left the medical profession for more lucrative callings. In this country Dr. W. R. Hubbert reports that of one hundred of his medical friends nearly seventy-five per cent. had, after graduation, entered other callings to add to their incomes, becoming real estate agents, book canvassers, etc., as well as practitioners.

Dr. Thurston found that one hundred and seventy-five different practices advertised for sale in *The Lancet* had an average income of $625 per year. When it is considered that the income in each case was the gross receipts of the practice offered for sale, and was estimated by one who would be anxious to make the best showing possible, it can readily be understood how poorly the average doctor is paid for his services. It has been estimated that the average income of all medical men in England, who actively work in their profession and have no other revenue, is $1,000 a year. A writer in the London *Quarterly*

Review, says that there are in England not a few competent practitioners of great ability and industry who, although willing to undertake anything honorable, do not receive $500 a year; the same writer says one medical man in forty rises to a position of professional eminence and social dignity. I am quite sure that these statistics, though at first appalling, will, upon second thought, be recognized by us all as holding good in this country. It is, therefore, the duty of every member of the Philadelphia County Medical Society to consider the propriety of becoming a member of the Mutual Aid Association, not because he feels that he may need assistance from his colleagues during his life or after his death for his family, but because of the help required by his needy brothers. I cannot, it seems to me, do a better thing than to urge you to become members of the Mutual Aid Association this evening, and to see your attorney as early as possible tomorrow and insert in your wills a legacy, even though small, for this object.

In looking over some old books lately I was greatly interested by the provisions made in earlier times for organizations of this character. For instance, in the time of Richard II, about 1387, the Corporation of the Barber-Surgeons in London, adopted a series of ordinances or regulations which corresponded with what we now know as a by-law.

I read from this slip of paper a translation from the Norman French of one of these ordinances. It is noticeable that it is the *first* of the ordinances, not the second, third, or fourth. It reads as follows:

"Firstly, to the honor of God and all his Saints, and to stir up the Commons of the people to do well, and to have perseverance in well doing, it is ordained that if any brother of the Fraternity who has been of this Fraternity for seven years, by chance fall into trouble, or into poverty, and if he have nothing left of his own by which he may be able to live, and it be not through his own folly, that then he shall have each week from the common box tenpence half penny for his sustenance."

At a still later period the following paragraph is found in the regulations for the Government of the Guild of Surgeons. This Guild, it must be remembered, was contemporary with the Corporation of Barber-Surgeons, and at one time united with it, so that the descendants of English stock may consider ourselves as being a sort of posterity to these two old surgical organizations of Great Britain.

The following regulation was made in 1435 for the Government of the Guild of Surgeons.

"Also it is ordeined and assentid in this composicioun that eueri Cirurgian of the fellowschipe in the craft of Cirurwgie to paiellid a quarter to a box that is viiid ayeer to the profit and worschip of the craft in helping and releuving the nede of the pore men of the same fellowschip."

In order to show the value of even a small legacy which I trust you are going to put in your will to-morrow for the benefit of this Association, I wish to point out to you the result of such legacy by Robert Ferbras, Citizen and Barber-Surgeon of London in 1470, who gave or bequeathed (it is not certain whether it was given before death or left in his will) two freehold houses in the Parish of St. John to be divided one moiety after the repairs among poor members of the Corporation of Barber-Surgeons in London. This provision, made over four hundred years ago, is to this day distributed by the officers of the corporation among twenty-eight members and their widows. Do you not therefore see the amount of good that can be accomplished if each member of this society will do as did the barber-surgeons in the 15th century, whose name otherwise would probably have been lost to us.

I have made these quotations to show that even in the earliest times professional men found that the income derived from practice was not to be depended upon; that they knew it was a vocation bringing in no large remuneration, and that a warm feeling for their colleagues compelled them to do what lay in their power for those members of the profession who fell into pecuniary distress and left their families without a proper income.

PELVIC PERITONITIS. ITS TREATMENT BY ABDOMINAL SECTION.

BY W. H. LINK, A.M., M.D.,

OF PETERSBURG, IND.

"The evil that men do lives after them, the good is oft interred with their bones."

Especially is this true of those men who, in time past, have originated the so-called systems in gynecology. Pernicious doctrines, false theories, and discarded methods live and flourish luxuriantly among the rank and file of the profession long after the great teachers who put them forth have mouldered into dust.

We hear men talk of ulceration as glibly as when gynecologists were nothing more than animated sticks of argenti nitras. There are yet those who labor diligently for weeks and torture patients for months trying to lift up with some sort of a pessary an enlarged and displaced uterus, fixed by inflammatory adhesions due to tubo-ovarian disease.

The rage for sewing up the lacerated cervix without looking higher for pathological conditions is still gratifying the mechanical dexterity of gynecological enthusiasts who have never taught their fingers to see through the vaginal vault.

The irregular and profuse hæmorrhages due to salpingitis or ovarian abscess are made worse or complicated with peritonitis by the use of the curette under the mistaken belief that causes for such conditions can exist only in the uterus itself.

The irritating electric current is shot through diseased tubes and ovaries day after day increasing tubal peristalsis and muscular contraction, inducing tubal leakage, causing pelvic peritonitis, multiplying the strength and enlarging the extent of adhesions, while still further provoking the exudation of plastic lymph. All this is done by honest, though misguided zeal, because somebody has taught that pelvic cellulitis is an entity and that, under the gentle and benign influence of the electric current, boggy masses and indurated tissue will melt away and disappear as by the touch of a magic wand.

The term cellulitis has for years satisfied the routinist whose confidence in iodine painting, hot douches and glycerine tampons is only paralleled by his previous devotion to a stick of caustic.

The past history of the medical profession has amply illustrated one fact, at least. The more visionary a system, the more enthusiastic its devotees. Cold facts, capable of demonstration, appeal to the reason only and the imagination has no sway. Hence the followers of Apostoli, like those of Hahnemann, relying largely upon the imagination for their facts, continue chasing the rainbows of therapeutics, often finding, no doubt, the buried pot of gold. But the day has come when a reason is demanded for every procedure, and pathology speaks from the operating table as well as from the dead-house. Theories no longer precede facts but are the logical out-come of every day experience.

It is the every day experience, the magnificent surgical triumphs of Lawson Tait, of Birmingham, and Joseph Price, of Philadelphia, that have revolutionized both the theory and the treatment of the pelvic diseases of women. It is the work of them and their followers that has retired pelvic cellulitis into "innocuous desuetude" and given us instead pelvic peritonitis, secondary to and coëxistent with diseased uterine appendages. Two thousand sections by Tait, and more than fifteen hundred by Price, have enabled them to demonstrate beyond cavil that indurated, convoluted, boggy and tender masses filling the vaginal vault and binding the uterus firmly in the bottom of the pelvis are nothing but agglutinated intestine, thickened omentum, or broad ligament, hypertrophied, indurated, convoluted, strictured, displaced and distended tubes, enlarged, cirrhotic, atrophied, or degenerated ovaries, circumscribed collections of pus or blood, complicated not unfrequently by an extrauterine pregnancy, while very often several of these conditions exist synchronously, tamped into the lower part of the pelvic basin like concrete, the entire mass smothed over with a copious exudate of plastic cement. The tubes may, and do, often become occluded. This may occur at either the pavilion or uterine extremity, or at one or more points along the tube itself, the resulting strictures enclosing as many abscesses as there are pockets in the tube lumen. There may be as many as six or seven strictures in each tube. The pockets may be filled with water, blood or pus, constituting a hyro-, hæmato-, or pyo salpinx. The walls of each tube may be distended and thinned to the point of bursting, or they may be thickened while the tube lumen remains normal in size, the walls when cut having the appearance of scar tissue and possessing very little vitality. In connection with this diseased condition of the tubes, the ovaries may be enlarged and tender, contracted and puckered, or degenerated into a mere shell or envelope filled with a large collection of pus or blood. The symptoms attending such conditions are many, but easily recognized; amenorrhœa, premenstrual pain, irregular menstruation, menorrhagia, scant menstruation, ovarian neuralgia, easily disordered stomach, a waxy color of the skin, a doughy appearance or expression of the face, painful coition, irritable bladder, often both vesical and rectal tenesmus, constant sense of uneasiness on one or both sides, marked pain on the left side when the bowels move, increased when constipation has existed for some time; inability to go up or down stairs, ride a horse-back, in a buggy, in a street-car or any jolting vehicle, without great pain, which is often attended or succeeded by marked nausea. There are frequent headaches, always backache, and in the great majority of cases an offensive and profuse muco-purulent leucorrhœa. There are irregular attacks of the most agonizing pelvic pain of a sharp cutting or tearing character, due to local or circumscribed peritonitis, a result of tubal leakage. These attacks are most frequently attended by elevation of temperature, nausea, coated tongue and anorexia. The belly is exquisitely tender, and the patient has to keep her bed. Should a large amount of pus from sudden traumatism leak into the peritoneal cavity, or should an abscess, by reason of its gradually thinning walls, give way, the patient dies suddenly from shock or from a rapidly diffused septic peritonitis. Should the leakage be no more at one time than protective adhesions and plastic lymph can shut off from the general peritoneal cavity into circumscribed collections, she only goes from bad to worse, becoming finally a chronic bed-ridden, morphia ruined, pain hunted, miserable, useless to herself, a burden to her husband, a disgrace to her children and friends, dead to the world; alive only to pain and suffering. This condition of things, a living death, is the daily experience of poor sufferers in almost every community in the United States, and they are consoled with the statement that their condition will be better just so soon as "the change of life occurs." Thus hoping against fate, they patiently submit day after day, and month after month, to have their vault painted, their vagina stuffed with boroglyceride tampons, their cervix sewed up, their uterus dilated, sounded, curetted, burnt, douched and pessaried. Fistulous tracts from ovarian pus collection burrowing along the rectum and opening at the side of the anus are slit up through the sphincter, and persistently refuse to behave as fistulæ in ano should. Compression of bowel and pelvic blood-vessels by heterogeneous pelvic adhesions gives rise to the most obstinate constipation or distressing hæmorrhoids, which recur as often as removed. The belly is beslimed with poultices, the stomach drugged with opium, until finally, the nervous system giving way under such prolonged irritation, betrays its grievances by erratic manifestations and both mind and body are found to be a wreck.

The chief causes or etiological factors underlying these conditions are specific and puerperal infection. But exposure at or about the menstrual periods, the long continued prevention of conception, traumatisms, the acute exanthemata may, and often do, prove potent causes. It has been a universal experience with me to find endometritis coexistent with tubo-ovarian disease. Medical treatment of these cases can be but palliative at best. This fact should invariably be set before the patient at the outset. Opium as a means of relief from pain, should be positively forbidden. It can only lead to a baleful habit and in no wise become a curative therapeusis.

The best results can be obtained by treating the patient as though preparing for an abdominal section. Keep her in bed. Put her on a liquid diet. Give a teaspoonful of epsom salts every hour till seven or eight doses are taken, or she has a large number of profuse watery dejections. Give her a thorough scrubbing from head to foot and follow with an alcohol sponge bath. Most frequently this regime brings rapid and great relief. But for permanent results, for radical cure, nothing short of a section with removal of diseased strictures and the breaking up of old adhesions is entitled to the least consideration or will have the least effect.

To illustrate the foregoing principles and their application I submit the following cases and their treatment.

Mrs. Z. Y., aged 35, married 12 years. II. para. Had a bad getting up from her last confinement six years ago. Barren since. Had suffered from profuse hæmorrhages at menstrual periods. Very irregular. Marked premenstrual pain. Had chronic leucorrhœa, very offensive at times. Had back-ache, headache and disordered stomach. Had had repeated attacks of pelvic peritonitis during last six years confining her to bed for weeks at a time. Had been completely cured by electricity. Had been unable to sleep on either side since cured. Suffered constant pain on both sides of pelvis, much increased at menstrual periods. After being constipated, suffered great pain on left side whenever bowels moved. Walked in a stooping or bent posture. A sudden jar or shake gave her great pain. Could not run up or down stairs nor run a sewing-machine without attacks of pelvic pain following such exercise. Sexual intercourse markedly painful.

Was called to see her in an attack of pelvic peritonitis which lasted six weeks. Temperature ranging from 101 to 105. Pulse running up to 155. Belly over region of ovaries most exquisitely tender to the touch. Digital examination showed uterus firmly fixed by adhesions, vaginal vault full on both sides, while bimanually, an ovarian abscess could be felt on the right, and a large mass of some sort on the left. Both tubes were distended, hypertrophied and tender. Her suffering was so great that the attending physician was compelled to administer large doses of morphia hypodermically to enable her to endure the awful pain of which she complained. Death seemed only a matter of days. She was informed that surgery held out the only hope of cure for her, and she eagerly accepted it. In the meanwhile my friends Dr. Byers and Dr. Fullenwider saw her, and concurred in both diagnosis and prognosis.

On the morning of November 17, 1891, twenty-four hours after she had been prepared, I proceeded to do a section assisted by Dr. Fullenwider, Dr. Clark, and Dr. Byers and Dr. Lamar. Through a median incision I removed both tubes and from each side a large ovarian abscess. The one on the right was so thinned by distention that it burst at once upon attempting to draw it from the pelvis, deluging the pelvic cavity with pus and blood. The collection on the left side was buried in adhesion and was bound to the sigmoid flexure by adhesive inflammation. It was enucleated and delivered whole. It contained thick creamy pus and was of such size as to obliterate both tube and ovary. After irrigating the abdominal cavity with hot water and putting in a drainage tube patient was put to bed suffering some from shock from which she soon rallied. On second day she was attacked with catarrhal pneumonia which kept her temperature up and caused great annoyance from the resulting cough for two weeks. Her pelvic pain entirely disappeared and the drainage tube was removed on the third day. Her convalescence was uneventful from the second week on. She is now in the best of health, doing her own work, has no pain or soreness, walks erect and has gained in weight as well as strength.

Cace 2.—Mrs. F. V. Married. III. para. Nine years ago had a miscarriage and suffered at time from puerperal peritonitis. Never been well since. Face and hands swelled every month. Was in bed two weeks of every four vomiting and cramping. Pain radiating from left iliac fossa running across bowels and locating itself apparently in region of gall-bladder. Vesical tenesmus most distressing. Constant desire to urinate. Back-ache almost constant. Profuse leucorrhœa. Sexual intercourse almost unendurable and she suffered with a most intense and excruciating headache for days afterward. She was losing her memory and feared that she would go crazy. She had had almost every kind of treatment following divers diagnoses. Malaria, neuralgia of the stomach, gall-stones, gravel, hysteria, dyspepsia, had each its turn, and yet she suffered.

Digital examination disclosed a uterus completely retroverted and firmly bound in that position by adhesions. There was a bilateral laceration of the cervix, which was soft and patulous. On each side the vault was very tender, in the right, moderately filled, the broad ligament thickened, and on the left a large mass could be felt, but fluctuation could not be elicited. Tubo-ovarian disease with tubal and ovarian pus was diagnosticated and a section advised as the only means of relief. It was accepted. But to set at rest all doubts in the matter, I asked Dr. McMurtry to examine the case, which he did, finding the pathological conditions as above, and he fully seconded both the diagnosis made and the treatment suggested. On the morning of the first day of December, 1891, assisted by Dr. Byers, Dr. Hatfield and Dr. Clark, I opened the abdomen in the median line, broke up the adhesions binding down the uterus, enucleated a large sanguino- purulent tubo-ovarian cyst on the left, and a hydro-salpinx and atrophied ovary on the right. After irrigating the abdominal cavity with hot water and placing a drainage tube, she was put in bed suffering very little from shock. She made a rapid recovery, temperature, pulse and respiration remaining normal throughout. On the fifteenth day she sat up, and on the twenty-first day walked about the house. Her health has been constantly improving. Her pains are gone and she now is able to go about and enjoy life, instead of spending from one-half to two-thirds of her time in the doctor's hands.

The chief objection urged against such treatment is that it unsexes. This objection is more imaginary than real. The disease has already completely unsexed. Rotten eggs bring forth no chickens, and degenerated ovaries, pus tubes, and displaced, diseased, adherent uteri are poor machinery with which to conceive, nurture and bring forth children. Even sexual intercourse in most cases is impossible on account of pain. And if a section cannot make a mother of any such, it at least restores to her the power of discharging her duty to her husband. A thing about as important as child-bearing.

HEART SOUNDS AND CARDIAC MURMURS.

Read before Vermont State Medical Society, October 14, 1891.

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The study of heart sounds and cardiac murmurs, with reference to their diagnosis by physical signs, requires an accurate knowledge of the anatomy, and physiological mechanism of the heart.

By heart sounds we mean the normal sounds produced by the action of the heart, while new or additional or adventitious sounds are called cardiac murmurs. Murmurs are not modifications of the normal heart sounds, but are new sounds, which are added to, or take the place of the normal sounds, on account of mechanical defects in the action of the heart. These mechanical defects are usually the results of pathological lesions.

The præcardial region or præcardia, is that part of the surface of the chest, which immediately overlies the heart. The upper boundary of this space, which corresponds to the base of the heart, is a horizontal line drawn across the sternum at the level of the third costal cartilage. The lower boundary is a horizontal line drawn through the fifth intercostal spaces. The left lateral boundary is a vertical line situated three and one-half inches to the left of the median line of the sternum, while the right boundary is represented by a similar line, situated four or five lines outside of the right margin of the sternum. The apex of the heart is found in the fifth left intercostal space three and one-half inches to the left of the median line of the sternum. I think this a better and more accurate description of its position, than to say it lies just within the linea mammilaris, for the reason that the nipple varies much in different persons in its relative position to the median line of the body.

The heart sounds consist of two successive sounds, following each other in a perfect rhythmical relation, and with a short interval between them called the short pause of the heart.

After the two sounds of the heart is a longer interval called the long pause. The two heart sounds are called respectively the first and second sounds. The first sound is longer, duller and louder than the second. The first sound corresponds with the systole of the ventricles and with the apex beat, while the second is synchronous with the diastole of the ventricles. In health there is no trouble in distinguishing the two sounds. In diseased conditions of the heart, the two sounds are apt to be confounded with each other, but may always be distinguished if we remember that the first sound corresponds with the apex beat and with the carotid pulse.

Regarding the mechanism of the production of the heart sounds, there has been a diversity of opinion. I believe all are agreed that the second sound is caused by the sudden closure of the aortic and pulmonary semilunar valves. The first sound is probably caused by the forcible tension of auriculo-ventricular valves, the contraction of the muscular walls of the heart, and the thumping of the apex against the parietes of the chest.

Cardiac murmurs are, as I have said, usually the result of valvular lesions. They are classified as direct or obstructive and indirect or regurgitant murmurs. All endocardial murmurs, are produced by the blood flowing in a normal or in an abnormal direction.

[1] "The common law which governs the seat of development and the transmission of all cardiac murmurs, may be stated as this: The abnormal sound called a murmur, is heard with greatest intensity just beyond the point of its development, and is transmitted from this point, forward or backward in the direction of the current of blood, which, together with the valvular defect, is the cause of the murmur. Forward and backward in this instance refer to the current of blood and not to the antero-posterior positions of the body."

With reference to the left side of the heart, we may have a mitral direct and a mitral indirect murmur, an aortic direct and an aortic indirect murmur. A mitral direct murmur is produced by the blood flowing in the normal direction, through an obstructed or roughened auriculo-ventricular orifice. It is heard with the greatest intensity over the left ventricle, at the junction of the fourth rib on the left side with its cartilage. With reference to the ventricular systole, this murmur is diastolic in character—it follows the second sound of the heart. In other words it occurs during the long pause of the heart and is synchronous with the contraction of the auricle.

The mitral indirect murmur is systolic in point of time, and is produced by a current of blood, which, by the ventricular contraction, is regurgitated through an incompetent mitral orifice. It is usually blowing in character, and is heard with the greatest intensity at the apex. It accompanies the first sound and is transmitted below the apex and to the left, along the sixth rib, and may also be heard behind, between the eighth dorsal vertebra, and the inferior angle of the scapula, on the left side.

The aortic direct murmur is also systolic in point of time, i. e., like the mitral indirect murmur it is produced during the ventricular contraction. It is caused by the direct current of blood flowing through an obstructed aorto-ventricular opening. It is not heard, however, at the apex, but just beyond the aortic valve, in the second intercostal space on the right side and close to the sternum. It is transmitted in the direction of the current of blood which produces it, i. e., along the greater blood vessels, and may usually be heard over the sub-clavian and carotid arteries. It may also be heard behind over the fourth and fifth dorsal vertebra, this being the point where the aorta strikes the spine. The aortic indirect or regurgitant murmur is diastolic in point of time, and is produced by current of blood being forced back through an incompetent aortic opening by the recoil of the large arteries. It accompanies the second sound of the heart, and is just behind the aorto-ventricular opening, or in the third left intercostal space, close to the sternum. It may also be transmitted down the sternum and heard at the ensiform cartilage.

In the right side of the heart there may be produced four murmurs, corresponding to the ones we have described in the left side of the heart. These are called respectively the tricuspid direct and indirect, and the pulmonic direct and indirect murmurs. All of these four murmurs are extremely rare and of no practical importance so far as physical diagnosis is concerned. In the first place lesions in the right side of the heart are seldom found in adults, and secondly, when present they are usually the result of lesions at the mitral and aortic orifices, and are so masked by murmurs at these orifices that they cannot be diagnosticated.

All valvular murmurs, as we have observed, either precede, take the place of, or immediately follow one of the heart sounds, and having distinguished these sounds from each other, we may easily determine the rhythm of a murmur. When we have done this, our diagnosis is completed by determining its seat. We shall be able readily to do this if we bear in mind the areas to which murmurs, arising at the different orifices, are propagated, and these we have already stated. Furthermore, I believe we shall always be able to determine the character of a murmur, by reference simply to its area, and direction of transmission, without studying its rhythm. Thus a murmur which is heard in the right second intercostal space close to the sternum, and is transmitted in the direction of the greater blood channels, is always an aortic direct murmur.

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[1] Porter.

A murmur heard in the left intercostal space close to the sternum, and often distinctly heard at the xiphoid cartilage, is always an aortic indirect murmur. Again, a murmur heard over the fourth rib, on the left side, at its junction with the corresponding costal cartilage, is always a mitral direct murmur. This murmur is not transmitted, but is heard only within the limited area here described.

Finally, a murmur heard at the apex and transmitted below and to the left, as far as the anterior axillary line, is always a mitral indirect or regurgitant murmur.

Having become familiar with the location of these areas, and bearing in mind the direction of transmission of the different murmurs, their diagnosis is extremely simple.

Two, three or even four of these murmurs may be found in combination, but having become familiar with the above points in their diagnosis, their differentiation is not difficult.

There is another class of murmurs, of considerable importance, to which we will briefly refer. These murmurs are not produced by endocardial lesions, and are called inorganic or chlorotic murmurs. Their cause is somewhat theoretical. They are due, however, to changes in the blood produced by anæmia, and probably also in part to innervation of the heart muscle from the same cause. These inorganic murmurs may be present at the mitral or aortic orifices, and may be either direct or indirect.

Indirect murmurs are far more common than direct, and of these a murmur at the base is oftener present than one at the apex. This indicates the preponderance of the aortic indirect over any other variety of chlorotic murmurs. These murmurs are heard over the same areas, and are transmitted in the same manner as organic murmurs.

A chlorotic murmur is usually soft, and blowing in character, and is accompanied by the general signs and symptoms of anæmia. These murmurs usually disappear under treatment directed to the general condition.

Dilatation of the ventricles is sometimes produced in connection with these chlorotic conditions, as evidenced by changes in the location of the apex beat. This dilatation of the ventricles sometimes causes organic lesions, principally at the mitral, and occasionally also at the aortic orifice. In other words, and finally, the cardiac condition in chlorosis sometimes culminates in permanent organic lesions.

CARBONIC ACID AN INDEX OF DANGER IN GIVING CHLOROFORM, AND HOW TO LESSEN THE DANGER.

BY THOMAS R. EVANS, M.D.,
OF BURLINGTON, IOWA.

We assume in this brief paper, from several analogies, that the activity of the respiration as shown by the amount of CO_2 exhaled, is an index of danger in administering chloroform, and renders the production of anæsthesia more difficult.

Hence, we argue the comparative safety and ease of administration to weakly persons, and the danger and frequent difficulty to the mechanic.

For this reason doubtless its safety in military life has been much overrated.

The more muscle the more CO_2 generated, greater seems the danger, and greater the amount of chloroform required.

The latter statement is well proven in dogs and rabbits, they being chloroformed with much difficulty.

The majority of deaths from chloroform are probably superinduced by asphyxia, not, however, commencing in the lungs, as the older physiologists taught, but in the systemic capillaries.

We will consider the administration of chloroform, with respect to greater safety, under the conditions of age, sex, digestion, etc.

Age.—The ages which seem most obnoxious are adolescence and the adult age, twelve to sixty. In the first there is an absolute increase in CO_2 as the muscular system is attaining its highest development, and in the second the muscular development being complete, the danger is greater.

As all medical men of experience know, infants, children, and old persons take the anæsthetic with comparative impunity.

Sex.—It is conceded that more than twice as many men are killed by chloroform as women, but during pregnancy and in the absence of menstruation the danger to the woman increases.

For Flint states "that the absolute increase in the evolution of CO_2 with age in the female is arrested at the time of puberty and remains stationary during the entire menstrual period, provided the menstrual flow occur with regularity."

Women are not as quickly killed by gases and vapors as are men.

Digestion.—CO_2 is greatly increased during digestion, but there is no necessity for *waiting* longer than *four* and a *half hours* after the patient has taken food *before commencing* with the *inhalation*, for Dr. Edward Smith found the CO_2 as much diminished after that interval as after twenty seven hours of fasting.

Foods and drinks.—Dr. Smith divides these into excito-respiratory and non-excito-respiratory.

The excito-respiratory foods and drinks are as follows: The nitrogenous ones, the cereals, potato, sugars; milk and its components, tea, coffee, cocoa, chiccory, rum, beer, stout, and the ales.

The non-excito-respiratory are starch and fat. Hence, the propriety of not allowing a patient to partake of articles of the first class within an hour of chloroforming.

The vomiting which such allowance may produce is a minor evil, in fact is conservative, diminishing CO_2 by its sedation, and putting an end to digestion.

Prout demonstrated that CO_2 was diminished by a concentrated infusion of tea, and this accounts for the success of certain German surgeons who prefer tea given before chloroforming, to alcoholics—tea possessing the convenience over alcohol of not being so likely to produce vomiting.

But stimulants have not been given with the view now advocated in this paper, to lessen the formation of CO_2, but with the purpose of stimulating the heart and lungs.

Fortunately, this purpose as concerns the respiration is contravened by the teaching of physiology.

Flint states "that the most constant effect of alcohol, such as wines and spirits, is to diminish the exhalation of CO_2. This effect is almost instantaneous when the articles are taken into the stomach fasting."

The vapor of alcohol also lessens the exhalation of carbonic acid, and it is probable that the A. C. E. mixture, now justly becoming popular, owes its comparative safety to this fact, and not so much to the fact that the alcohol favorably influences the evaporation of the more volatile constituents.

Time of Day.—The early morning hours, and the earlier before eleven o'clock the better, is the most favorable time for chloroforming. About 11 A.M. and 4 P.M. are the most unfavorable times. At these times the temperature of the body naturally increases, and of course, the activity of the respiration.

The obstetric hours of the night, between twelve and three o'clock, A.M., are the most favorable times in the twenty-four hours, and this is one of the several causes of the safety of chloroform in labor.

These are no merely physiological fancies, but are substantiated by many surgeons, that they have less trouble with chloroform in the forenoon than in the afternoon.

Seasons.—"It has been well established that spring is the season of the greatest, and fall the season of the least activity of the respiratory functions." (Flint.) Had we statistics as to the time of the year as affecting deaths from chloroform, it would probably be seen that the majority of them occur in spring and winter, and this irrespective of the comparatively larger number of administrations at those times.

Temperature.—But if it were true, as some writers and a Commission allege, that deaths from chloroform are due to over-dosing, there would be more deaths during the summer.

For at a temperature of 85° F., air will contain and carry twice as much of the vapor as at 65°.

But as if to neutralize the greater volatility there is much less CO_2 exhaled in warm weather.

Chloroform is the favorite anæsthetic in southern Europe, and in the progressive, yet conservative Southern States of North America, and most of the reports of deaths from chloroform seem to come from the Northern States of the United States, where comparatively little chloroform is used.

Pure Air.—"It has been noted," says Packard in his Minor Surgery, "that chloroform acts more speedily when administered in the open air."

It not only acts more speedily, but more safely in the open air.

This is well proven by the good results from military surgery, which is largely conducted in the open air, and during the warm months.

When the inhalation is begun, as it should *not* be, in the presence of a large clinic, and with the usual CO_2 saturation of the amphitheater, we often have heard the expressions, "the patient does not take the anæsthetic," "well, doctor, please *give it to him*," etc.

The anæsthetizer's lot, under those circumstances, as he has often experienced, is not a happy one. And thus is illustrated the incompatability between carbonic acid and chloroform.

Moisture.—When possible chloroform should be given in dry weather, as the system furnishes more CO_2 in damp weather.

CONCLUSIONS.

It is the brawn of a subject, irrespective of his weight, that makes chloroform dangerous for him.

To the man with "muscles of brass," and to the sturdy, scantily menstruating domestic, ether and not chloroform should be given, and more especially in northern latitudes.

Should Mr. John L. Sullivan be chloroformed while in his prime, and during a northern spring or winter, America would be in great danger of losing her champion.

The *fatty heart*, which we used to hear so much about, and which is impossible of diagnosis, is as nothing in the scale of danger to the *fatless muscle*, which is both the manufactory and storehouse of carbonic acid.

For this reason it is not the drunkard nor the opium habitué, nor the user of tobacco, and decidedly not the average sedentary and professional man who is a bad subject for chloroform, for all of these exhale a lessened amount of CO_2, but the active and muscular man in the prime of life.

To him it is dangerous and when he is killed by it, it is frequently before he is thoroughly anæsthetized.

HOW AN ELECTRIC CURRENT MAY BE ABSORBED INTO THE LIFE CURRENT OF HUMAN BEINGS BY INDUCTION, AND WITHOUT VISIBLE CONNECTION WITH ANY ELECTRICAL APPARATUS OR CONDUCTOR.

THE EFFECTS WHICH MAY BE PRODUCED BY MEANS OF THE ELECTRO-MAGNETISM UPON THE BRAIN.

BY MARION GUILD WALPORT,
OF WASHINGTON, D. C.

The phenomena of electrical action by absorption and induction is just now awakening the attention of the scientific world. In Johnson's Universal Cyclopædia, latest edition, Vol. v, p. 188, he says: "The most important phenomena of magnetic action is that called induction, or the magnetizing action of a magnet on distant substances, animate and inanimate. We also find that this phenomena was discovered and put into practical use by Mesmer, a Vienna physician, in 1774, who found that he could influence and communicate at will to his patients, even at a distance from them, by means of electro-magnets generating a magnetic fluid or electric current."

The International Cyclopædia, Vol. ix, says: "By induction we mean the power that an electric current has to excite, to magnetize and to draw into actual contact with itself, properties and bodies near or in range with the current, but not in connection with the same, thus forming a closed current as long as the current of induction is kept up or lasts."

"By absorption we mean the power or force which an electric current has of absorbing or drawing into itself by suction any body near, but not in contact with the current."

In Lessons in Mechanics of Magnetism, p. 29, Edmund Shaftsbury published in 1888, he says:

"The phenomena of induction and absorption by electrical currents is just now awakening the attention of the scientific world."

"Induction is the process by which another person or object is influenced. That actual contact or near approach is *not* necessary is proven by the magnetic needle, which feels an influence exerted thousands of miles away, yet were this not a fact established beyond all power of contradiction, no person could be found at the present day to believe it." Upon page 35, he informs us that "M. Dubois was the skilful experimenter who first succeeded in making the compass needle deviate by an invisible motor or electrical force, and that this deviation was effected at great distances and ceased when this force was *removed*."

In a pamphlet called "The Narrative of John Trust," published at Alexandria, Va., in 1865, we find that Joseph Mazzina, an Italian, was said to have been the greatest electro-magnetizer in the world, carrying out his plans largely through subordinates, whom he placed under his influence; he is *said to have exerted a wide influence upon European* politics by these means, and to have been instrumental in the downfall of Napoleon III. That various crimes have been committed by subjects under the influence of an unscrupulous electro-magnetizer known as "criminal suggestion" is a well authenticated fact, and one that demands immediate investigation. This is *also the secret of the mind reader and the medium.* Electro-magnetism, be it understood, includes all phenomena in which an electric current magnetizes or influences animal life; the most powerful form being that produced by the electro-dynamo. Some of these dynamos have fork-like springs which are the poles of the machine, and which show in what direction the properties or bodies are which are under the influence of the current. By means of the blower or bellows upon the main shaft a strong current of electrical air may be produced, having a powerful suction. This is the chief element used in igniting the electric spark or natural magnetism—or in other words, vital force in animate life, known as magnetizing and electrocuting by absorption and induction. This current is felt but not seen, unless a wonderful force is used, then a smoke-like vapor may be discovered.

It should be more generally understood that electricity or vital power exists in all things to a greater or lesser degree, and that this electricity, or vital force, constitutes the chief elements of the brain and body. The phosphorus of the brain being identical with the electric spark, then what may not the consequences be when this brain power or phosphorus is ignited by an electric force, thus overbalancing the natural equilibrium or equipoise of the brain and body. The brain is the electrical condensor, ready at any instant to charge or control any nerve of the body.

Thales was not far out of the way when he said "that electricity was the life." Let us realize that the human body alone contains all the elements of a stupendous electric battery.

Man was made out of the dust of the earth. When we recall how many centuries electricity has been known and studied *under its various forms and* names, we feel less and less reconciled as to the comparative ignorance that exists since the creation of the world; yet we are still in our infancy as to its limits or possibilities, and are constantly expecting new developments.

Thales, the chief of the Seven Wise Men of Greece, discovered *something of its power* from a piece of amber or "electron," which he found possessed the properties of attracting light articles to itself when excited by simple friction. This was more than twenty-five centuries ago, yet how slow has been our comprehension of this great force. And we generally credit its discovery to Benjamin Franklin, because he was the first student and philosopher to show how its power could be put to practical use in this country, and it is only in our own century that the power and possibilities of the electro-magnet have been in any sense understood. Many cases have recently come to light in Europe showing how this force has *been used to add a new and terrible chapter to the* records of crime; and we can cite dozens of cases in our own country, from John Brown, J. Wilkes Booth, Guiteau, Ward, Kincaid and others down to pretty Jessie White, who was tortured through electro-magnetism into shooting herself at Joliet over a year ago. That they were victims of this terrible, insidious and *most secret form of torture there can be no doubt to* an expert, as they have shown every evidence of the same. The effects of an electric current upon the human body are easily detected, chief of which is a grayish or yellowish pallor and deep, dark circles under the eyes, showing that the blood is becoming magnetized or poisoned, and that pressure has been *brought to bear upon the brain, thus weakening the* vital force and draining the system. Often the victim becomes magnetized until he is not under the control of his own will and judgment, before he is aware of any influence. This crime is resorted to by the electro-magnetizer as stated for various purposes, among which may be mentioned secret communications called "mind telegraphy" or "the under current," "mind reading," influencing legislation, obtaining information as to State and executive secrets, reading the minds of accused persons in order to obtain evidence of their guilt (this latter is known to have been resorted to in Paris), producing insanity, paralysis and various brain disorders, vicarious assassinations, murders, thieves, inebriates, immorality and vice of every kind, and lastly for slow poisoning or immediate death. By the aid of an electric current upon the human body, almost any form of disease, and even consumption, may be produced or simulated. The form of brain torture and exhaustion by which means real or apparent insanity is frequently produced is called "tricknomania" (see *The Woman's Tribune*, May 17, 1890, published in Washington). For description of the effects of electro-magnetism upon the human body, see the *National View*, September 27, 1890 (published in Washington).

When we realize the great force and velocity of the electric current, which is known to travel eight thousand miles a minute, we can understand that the electric poisoner, absorber and magnetizer can keep up at will the current he has ignited or absorbed by his electrical apparatus, or in other words "cupped," no matter how far removed he may be from the victim. As we have said, a powerful current upon the heart stops its beating, commonly called heart *failure or heart disease, for which no natural cause* can be assigned, and it takes a powerful force indeed to stop or even weaken this great organ, the largest and strongest in the human body.

One of the surest effects of *electrocution*, or in other words that a human body has been injured by an electric current, says Dr. Tyler, is the tenderness of the flesh, and the slight shock which the piercing of the flesh by a needle produces. We can cite example after example of the terrible secret influence of the electric magnetizer, showing how the lives of honorable *men and women* are wrecked, how great bodies of men are secretly organized and controlled, ready at the command of the chief through his subordinates to commit any crime, from arson and murder down to robberies and thefts. We can cite cases of families severed, homes broken up, ladies of high position humiliated and injured by these terrible means; of forgeries committed, money extorted—but enough has been said to impress all with the urgent necessity of an immediate investigation and exposure of this terrible force. Scientists and electricians should be called upon to ascertain if some way cannot be devised to trace the electric poisoner who has absorbed the human being's life current by the means which we have described. The government of every country should at once also pass stringent laws preventing the practice of magnetism, or the so-called hypnotism, even upon animals. In conclusion, let us study the laws of life, which should be the laws of health; in other words, let us study nature, and try and understand the great forces around us. If men and women would only think and reason for themselves, how much misery might be spared the world. The Creator designed that man should not die until he reached an old age, like the corn that is ripe or the fruit that is ready to fall; all else is contrary to the laws of creation, and we do err when we lay the breaking of these laws to divine interposition or Providence. We see no reason or natural cause why man may not live more than a century, when no mechanical cause is at work to sap his vitality. Let us remember the long lives of the patriarchs, when crime was comparatively unknown, and may our teachers, scholars, leaders and divines teach the doctrine of longevity rather than that of mortality; of living useful and honored lives, and teach us how to perpetuate the same by being among the first to discover, to denounce and to expose all forms of vice and crime, all forms of mechanical agency by which means life may be taken or shortened and the causes or motive force discovered.

DENISON'S PORTABLE LUNG COMPRESSOR OR EMPHYSEMA JACKET.

BY CHARLES DENISON, A.M., M.D.,

OF DENVER, COLORADO, PRESIDENT.

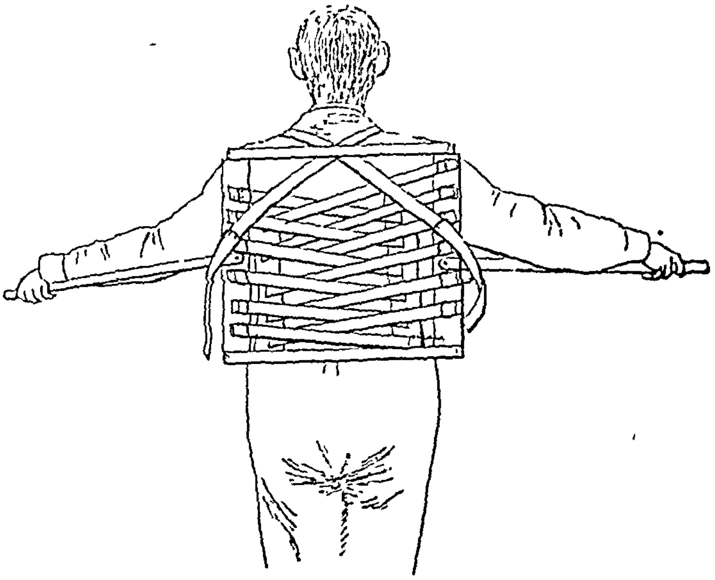
Professor of Diseases of the Chest and Climatology, University of Denver; Author of Rocky Mountain Health Resorts, the Annual and Seasonal Climatic Maps of the United States, and of Reports to the A. M. A., and International Medical Congress (1876 and 1887), etc,

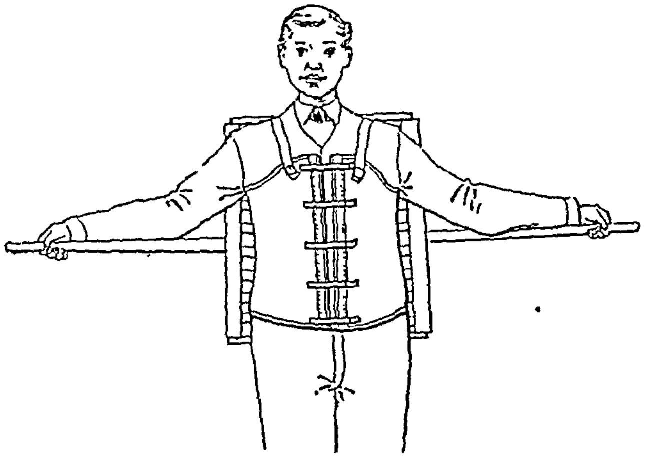
This apparatus is especially constructed to aid the clearing out of secretions and stagnant air contained in the lungs under certain conditions of disease, such as emphysema, and bronchiectasis, or either of them alone whether associated or not with the profuse bronchial catarrh usual to these distressing troubles.

Abundant expectoration is brought about, the tendency to pulmonary œdema is lessened, and a freer and more natural circulation both of the air and the blood currents within the thorax is produced by the proper use of this devise.

The following is Dr. Denison's description of this lung compressor extracted from his address as President of the American Climatological Association, Sept. 1890, on "Abnormal Intra-Thoracic Air Pressures:"

Before leaving this subject, I wish to describe a device I have had constructed for the self-treatment of emphysema. We will call it the Portable Lung Compressor. It was suggested to me by the "Rossbach Chair," which, in its mechanism and result, it much resembles. Its purpose is *the rhythmical and forcible compressions of the chest in consonance with expiration.* The idea of assisting the expiratory movements of the emphysematous patient is not a new one, as before Rossbach invented his chair physicians (Gerhardt first) used to train nurses to press the sides of the patient's chest during expiration; and belts and other devices have been used to compress the chest. The results have been stated as generally favorable.





This lung compressor, or emphysema jacket, is supported and controlled by a simple nearly square frame, which can be hung against the wall, so that the patient can get into the jacket alone. This frame has for its sides pivoted, half round, elliptical beams, arranged so they can be pivoted at from one to three inches from their centres, thus giving greater compression as desired. To these, bands are fastened by buckles, which bands are sewed to the opposite sides of the jacket, and therefore cross each other at the patient's back. By their traction they squeeze the chest when the jacket is used. The compression can be made to suit any shaped chest, or any particular part of a given chest, by dividing the front lacing of the corset in three different fastenings, and by the adjustment which the posterior straps and buckles and the retaining shoulder straps permits The power is ample, which is given by the side levers (attached to the middle of the side rollers), as they are moved forward by the patient's hands during expiration, and backward during inspiration.

In Rossbach's apparatus, the chest was compressed backward against the back of the chair, while in this there is a more even compression of the thorax in all its parts, and this jacket can be used, not only in the sitting posture, but either lying down, standing, or even during exercise by walking. Of course, the great aim is to aid expiration. However, the movement backward of the arms during inspiration undoubtedly aids the act of breathing, not only by freeing the chest from the previous compression but by the more natural position assumed for inspiration. The kinds of breathing it would seem best to practice with this devise are slow measured inspirations with as complete emptying of the chest as can be comfortably borne, say twelve or fifteen breaths per minute, for as many minutes at a time, three times a day. I believe that a return of the normal resiliency of the emphysematous lung, and the clearing out of the muco-purulent contents of bronchial dilatations, can be favored by the systematic use of this apparatus. The opportunities I have had of trying it decidedly warrant this statement, and I trust any of you who try the Portable Lung Compressor will have the same experience.

BURNS OF THE EYES.

Read to the Kentucky State Medical Society, at Louisville, May 5, 1892.

BY DUDLEY S. REYNOLDS, A.M., M.D.,

Professor of Ophthalmology, Otology, and Medical Jurisprudence, in the Hospital College of Medicine, Medical Department of the Central University of Kentucky; Ophthalmic Surgeon to the Louisville City Hospital.

Burns of the eyes are entitled to especial consideration when they affect the conjunctiva or cornea. They should be classified according to cause, and extent. The ophthalmic surgeon seldom sees the patient whose eyes have been burned by caustic alkalies or acids in time to employ chemical antidotes, yet these are too often neglected by those who have the opportunity of seeing such cases at the moment of occurrence.

In order to draw practical conclusions, it will be necessary to enter somewhat into the details of this part of the subject, and, if I inadvertently indulge in some adverse criticism of my peers, who have written authoritatively upon this subject, I beg that my clinical observations be taken as sufficient warrant for the personal conclusions to which I may invite your attention. Professor Noyes (p. 266) directs attention to the especially destructive agency of the fulminate of mercury, used in percussion caps, cartridges, torpedoes, etc., and which boys are prone to use somewhat recklessly. The great extent to which burns from this source usually penetrate the tissues, may be accounted for, both by the intense explosive force with which the heated particles are driven into the eyes, and the very fine amorphous division of these particles. A deep slough almost invariably follows burns of this kind, and the treatment of the eyes so injured must be conducted with reference to this fact; because, a slough, of any extent, leaves a raw surface, which, by contact with the opposed mucous membrane, will, in time, become adherent. The particles of the fulminate may be accompanied by insoluble matter, and thus produce permanent stains in the cornea.

Quicklime frequently flies into the eyes of plasterers and others engaged in handling it. Its destructive effect is very rapid, and may be partially counteracted by the instantaneous use of vinegar, which converts a portion of the lime into the comparatively harmless acetate; the remaining portion should be removed by instrumental means.

Ammonium, in the form of the caustic liquor, or the carbonate, produces very painful caustic effects when spattered into the eyes, and may be quickly neutralized by a few drops of vinegar, or any mild acid, such as lemon juice.

Nitrate of silver is a dangerous caustic, yet it is almost in constant use by thoughtless surgeons, who imagine the destruction of the surface of the inflamed mucous membrane, in some mysterious way, arrests the inflammation. Knowing full well the destructive action of this potent agent, the surgeon who employs it usually provides himself with a saturated solution of chloride of sodium, and, on applying the silver, he washes off the excess from the surface of the membrane. The coagulum, characterized by the appearance of a white film, is quickly brushed over by a little of the solution of the chloride of sodium, which precipitates the insoluble chloride of silver, leaving a thin eschar to separate by the ordinary process of sloughing. This is no less a burn than that following any other agent producing destruction to the same degree and extent. This process being repeated, involves, of course, the development of a constantly increasing amount of cicatrical tissue, proportioned to the depth and extent of the cauterization.

Sulphate of copper, for nearly half a century in almost constant use, has, like the nitrate of silver, done incalculable damage to the human family, as a caustic. The depth and extent of its action is much less than that of the silver; but it does unmistakably provoke parenchymatous inflammation, when frequently applied to the conjunctiva. It produces likewise such destruction of the corneal epithelium as to create an opaque film which permanently impairs the acuity of vision.

Dr. O'Halloran, in the first chapter of his "Remarks on Acute and Chronic Ophthalmia, and on Remittent Fever," published in London, 1824, speaks of bluestone being used with great efficacy and safety in the treatment of inflammation of the conjunctiva, and states that he had treated hundreds of cases of chronic corneal and conjunctival diseases by the direct application of bluestone to the inflamed membrane. Although it had been used before, yet these remarks, from an eminent army surgeon, led the profession to an indiscriminate use of it as a caustic, which I regret to say has not even yet been abandoned.

Caustic potassium, in the form of concentrated lye, is frequently introduced into the eyes. It is instantaneously destructive, and should be treated at the instant of occurrence by free ablutions of vinegar, followed by a weak lotion of chloride of sodium, to be more particularly explained presently.

Mr. James Dixon, of London (p. 68), in the third edition of "A Treatise on Diseases of the Eye," 1866, and in the Section on Ophthalmic Surgery in Holmes' System of Surgery; 1881, strongly recommends the use of liquor potassium for the destruction of hypertrophied papillæ. He says: "The *fluid* is dabbed upon the everted lids, so as to be fully brought into contact with the whole surface, and it appears to act by saponifying and dissolving away the *hypertrophied* tissue." He says it should be used every few days for a period of about six weeks. This explanation by Dr. Dixon, of what he supposes to be the therapeutical action of the caustic, shows exactly how all alkaline caustics act in destroying the conjunctival membrane and the cornea.

Fused metals are, perhaps, of all other causes of accidental burns, the most dangerous and frequently encountered. The momentary treatment should, of course, consist in the removal of the particles of the metal.

Burns by steam, and boiling fluids, have no chemical antidotes, and require, therefore, no chemical treatment at the instant of occurrence.

Now, in general terms, permit me to say, the results of all these and similar injuries are modified, more or less, by early treatment. Those which occur in the hands of the surgeon, as nitrate of silver and sulphate of copper, are happily becoming less frequent. Less than a month ago, however, I was consulted by a brother practitioner in this city in regard to an old gentleman 70 years of age, who had chronic blepharitis, and who had been subjected for a long time to the almost daily application of sulphate of copper, in the hands of a physician. The retrotarsal conjunctiva had become a swollen mass of callous tissue. The corneal epithelium had been destroyed, and with it the underlying anterior elastic layer, throughout the extent of the whole surface, in both eyes. Having become discouraged, he remained home for a few days, when the pain, becoming so intense, he was obliged to summon other medical counsel. The physician called sought my aid in consultation. The treatment suggested consisted in the use of 1 gr. of bichloride of mercury, and ½ oz. of chloride of sodium, to a quart of distilled water, to be used every hour to keep the eyes cleansed from accumulating excretory matter. To relieve tension, 1 gr. of sulphate eserine, dissolved in 1 oz. of distilled water, was directed to be instilled into each eye every four hours. The patient being of the rheumatic diathesis, salicylate of sodium, 10 grs. in a goblet of water, every four hours, was employed. He has made slow but steady recovery; and whereas he was unable to count his fingers when I first saw him, he now goes about alone. The amount of corneal opacity, however, is such that he will not likely be able to see to read again. I will not burden you with a citation of cases of destructive cauterizations by sulphate of copper, and nitrate of silver; but they are, I assure you, sufficiently numerous to invite most earnest inquiry into this terrible and misguided method of treatment. Now, one of the main features I had in view concerns the treatment of every class of burns of the conjunctiva, and the cornea, which are sufficiently intense to cause abrasions of the surface. In no case should the eye be closed, where it is possible to keep it open. The use of oils, and especially of castor oil, so much in favor in the profession, produces, in all cases, an increase of irritation. Whenever any mucous membrane is wounded and it becomes necessary to make local applications to it, the chemical composition of the fluids covering that membrane, in its normal condition, should be considered, in devising the plan of local treatment. Now, as is well known, the conjunctiva in its normal state is constantly bathed in a fluid rich in the chloride of sodium, and so this salt should enter into nearly all local applications designed to remove offending matters. The reason no kind of bandage should be employed is obvious, as its use must necessarily favor the occurrence of attachments between the lids and ball. A case in point is that of Mrs. M., of New Albany, who in some manner got a quantity of boiling water into the left eye. She was opening a can of concentrated lye at the time, and placing her finger in the lye, instantly put this finger into the eye in such a way as to leave large quantities of the crystals lodged between the lower lid and the surface of the ball. A druggist next door used ablutions of vinegar, washing away the excess of potassium, and thus limiting the extent of the burn. The family physician arriving, used castor oil as recommended in the books, and applied the cotton compress. The pain was most excruciating, and he gave hypodermic morphine. After twenty-four hours of this kind of treatment, I was called.

I removed the dressings, washed the eye with a solution, as follows:

℞. Borate of sodium, ʒijss.
Chloride of sodium, ʒss.
Distilled water, ℥xij.
Camphor water, ℥jv.

This application relieved the pain almost instantly, and by renewing it every hour, the patient was comparatively comfortable. The next day she was able to visit me at my office. The slough involved a large extent of the lower portion of the cornea, perforating at the inferior margin. Before the period of perforation I directed a solution of eserine, one grain to the ounce of water, dropped into the eye every four hours. Keeping the pupil contracted, prevented the iris flowing into the open wound of the cornea. When the perforation took place the eye was closed with a little cotton wool, and a piece of plaster, just enough cotton being used to keep the plaster from adhering to the eye-lash. In about forty-eight hours the dressing was removed, and the corneal wound found closed; adhesions had taken place between the lower lid and the surface of the ball. Passing a probe under the adhering portion, separation was produced, and a little ointment of yellow oxide of mercury placed between the lid and ball, smoked glasses being used, and the eye left open. In this manner the treatment was carried on until complete cicatrization resulted.

Where burns are so extensive as to make it impossible to prevent adhesions between the lid and ball, these may be greatly modified by leaving the eye open, and daily separating the opposed abraded structures with a probe anointed with a little yellow oxide of mercury ointment.

I will not tire your patience with a further recital of cases; but wish to remark, in conclusion, that no injury to the eye, in the nature of a burn, should be treated by a bandage and compress; yet this plan is recommended by Nettleship, Juler, Carter, Meyer, McNamara, and I believe nearly every writer on Ophthalmic Surgery.

Salicylate of Lithia.—Dr. Vulpian states that salicylate of lithia is more efficacious than salicylate of soda in cases of acute and progressive subacute articular rheumatism. It also has some effect in chronic cases when a certain number of the joints are still deformed, swollen and painful.

Nitrate of Silver for Weeping Eczema.—Dr. Leven (*Therap. Gaz.*, Feb. 15, 1892, p. 114), recommends the use of a one per cent. solution of *nitrate of silver* in obstinate cases of weeping eczema. Several applications are to be made during the day, the part to be covered with a bismuth ointment in the intervals.

ON THE TREATMENT OF DIABETES MELLITUS.

Read before the Kings County Medical Association, April 12, 1892.

BY H. C. RIGGS, M.D.,
OF BROOKLYN, N. Y.

In commencing on this subject a writer in the *Lancet* recently remarked: "Diabetes is a disease full of interest, owing in great part to the lacunæ that still exist in our knowledge of its essential nature."

He is most certainly right in thus assigning imperfection and uncertainty of information as the reason for medical and scientific interest in this matter.

Mooted questions are always those about which medical contest is sharpest and medical interest is keenest, while settled facts are left to stand as landmarks of progress, or as foundations for new structures of experiment and theory.

It is emphatically true that as regards the causes underlying the symptoms classed together under the term diabetes, the "lacunæ" are abnormally large and the interstitial substance of fact is uncomfortably thin.

Numberless theories of causation have been advanced, and probably will continue to be until a satisfactory etiology is established. But whether we consider diabetes as symptomatic of neurotic disturbance, or of pancreatic change, or of absence of a glycolytic ferment in the blood, or of a more or less complete combination of all these conditions, there still remain some fairly well established facts in its pathology upon which to found a reasonable scheme of treatment.

These facts are:—

1. In all cases of diabetes mellitus the power of assimilating carbo-hydrates is defective.
2. This failure of metabolism deprives the body of a corresponding portion of its necessary nutriment and causes the usual local and general signs of marasmus and mal-nutrition.
3. Some or all of the carbo-hydrates taken as food, failing of proper conversion to body use, appear as sugars in the urine, which secretion thus becomes abnormal in amount, gravity and constituents.
4. Many authorities are agreed in considering the mild type of the disease as that in which the sugar excreted is derived directly and solely from the failure of carbo-hydrates ingested to be transformed into glycogen in the body; and the severe type as that in which sugar is excreted even when no carbo-hydrates enter the system, a condition probably due to a general failure of metabolism.

From these few points of comparative certainty, rising from the chaos of inflicting results and divine theories necessarily incident to the investigation and ultimate elucidation of such abstruse chemical and pathological problems, has come a line of treatment, partially rational, partially empirical, which we desire to discuss together this evening.

The treatment of this disease falls naturally under two heads: First, treatment by diet and hygiene; second, treatment by drugs. Of these two divisions the first is by far the most important and the most satisfactory.

Diet.—If, as has been already stated, the ingested carbo-hydrates are the source from which part or all of the excreted sugar comes, the first change indicated in an anti-diabetic regimen, is the taking out of all foods into which starches and sugars enter.

Theoretically this should give the best results, but there are numerous practical reasons why it is rarely advisable or possible to do this. It is to be remembered that diabetes is not often cured. It is a disease greatly relieved by treatment, but the cases where sugar is permanently absent from the urine under unrestricted diet are very few. Hence, the diet upon which the physician puts his patient in the beginning has usually to be continued with more or less stringency for the rest of the patient's life. We also find that complete elimination of carbohydrates cuts off from him three great staples of his daily food—bread, and potatoes and sugar. He would gladly do without these for weeks or months if he could be sure of recovery at the end of his deprivation. But to cut himself off forever from these foods is a tax upon the strongest will; and if too great a point is made of it he is apt to give up treatment in disgust.

We have in saccharine a fairly good substitute for sugar, so that loss of that article is easily endured. For bread we have such substitutes as may be made from gluten or almond flour. The taste of such preparations is too pronounced to be well tolerated for any great length of time, though their flavor is hardly to be called unpleasant at the outset. Gluten bread is condemned by some writers on the ground that many specimens contain as high as 20 per cent. of starch—a percentage greater than that found in potatoes.

The opinion seems to be more and more widespread that a small allowance of ordinary bread—1 to 3 ounces a day—keeps the patient satisfied, increases his liking for other foods and yet does no appreciable harm.

All sorts of diet schedules are advocated as giving good results. However they may differ in detail, these all agree in cutting out the carbo-hydrates. The principle is the same in all, but there is every shade of variation in the rigidity of its application. From the skimmed milk treatment of Dankin to the liberal menu of Flint is certainly many degrees of dietetic latitude. The stringency of the diet should always depend upon the results of its enforcement in each individual case. If the patient is well nourished and in good general health, regulations may be very strict for a few weeks until it can be seen what effect the diet is having on the urine and the sugar. But it is certain that no attempt to reduce the excretion of sugar should be persisted in at the expense of the general condition of the patient. For we know that diabetics may live along for years upon a reasonably liberal diet, with the almost constant presence of sugar in their urine, yet very comfortable and in the enjoyment of fair health.

Patients accustomed to alcoholics do not get along well if deprived of them, especially when they are struggling to maintain themselves under the loss of so many accustomed table necessaries. Claret, Hoch, dry Sherry, and wines of that class in reasonable quantities are usually satisfactory.

Such liquors are also of service as tonics in cases where general debility is marked.

But diet has other objects besides the reduction of carbo-hydrates ingested and excreted.

Many patients are in wretched general condition when they come into the doctor's hands. Imperfect assimilation, intestinal indigestion, the dry exzematous skin, the consuming thirst, the constant annoyance by day, and insomnia by night arising from the polyurea combine to reduce them to a pitiably low state of mind and body. This poor condition calls for the most careful treatment by all means at hand; and none are of greater service than careful diet and hygiene. Patients should be encouraged to use fats and all sorts of foods not too strongly counter indicated by the diabetic state.

Butter, milk, cream, light forms of cheese may be used freely. Cod liver oil, which in this condition is to be regarded as a food rather than as a drug, is of great service in many cases. If it is desired to give it in emulsion, the sugar usually present in such preparations may be replaced by a corresponding quantity of saccharine. Patients often feel that, because they are restricted in certain directions they must be careful in all their eating. Hence, they need encouragement and special direction, not only as to what they may not eat, but also as to what they may enjoy.

There are no cases where attention to detail, and accurate knowledge of all that constitutes the round of daily life, is more important to patient and practitioner. For while such care is the chief factor in any successful treatment of this disease, it serves another almost equally important purpose in offering the only reliable data upon which to base a correct prognosis. If, now, under careful diet and hygiene, persisted in for two or three weeks the general health of the patient improves and the diabetic symptoms are non-progressive or on the decline, there is certainly cause for hope that the disease is controlled by the usual measures; while a case which shows little or no improvement under diet alone, offers slight prospect of success by any other means at our disposal.

In order that our knowledge of the patient's condition may be perfect, an absolutely thorough physical examination should be made preliminary to all treatment. The amount of urine passed in each twenty-four hours should be measured for several days, and its chemical and physical properties recorded. Such a series of tests will let us know the general run of the disease, uninfluenced by treatment of any kind.

With this preliminary knowledge attained, the reduction of the diet should begin at once. Sugar may be cut off absolutely at the start, and saccharine, in pellets for table use, and in solution for cooking purposes, substituted.

Bread should be reduced gradually, as we can offer nothing very satisfactory in its place. If it is intended finally to use gluten or almond preparations, the ordinary bread given in the course of reduction should be toasted, as this makes the transition to bread substitutes much easier. The effect of these measures must be carefully noted, not only upon the quantity and character of the urine, but upon the general condition of the patient. If, after a few weeks, the sugar entirely disappears, the diet may be gradually liberalized, the excluded articles being added in small quantities, one by one, just keeping within the limit where sugar reappears in the urine. By this constant experimentation a dietary may be established restricted enough to relieve the diabetic symptoms, yet liberal enough to build up the patient's general health, and do away with a large share of the annoyance of a regulated diet.

The distressing thirst which is often present impels the patient to drink large quantities of fluids. It does not seem necessary to require him to give these up to any extent disagreeable to himself, as the treatment of the case will usually relieve the thirst and dryness of the mouth, thus causing a natural decrease in the desire for any excessive amounts. Since certain mineral waters, like Carlsbad and Vichy, are considered of actual medicinal value in these cases, it is well to let the patient use them in place of ordinary drinking-water.

It is agreed on all hands that proper hygienic measures are of great value to diabetics. It has been shown experimentally that the glycogenic function is performed more rapidly and more completely when the subject is made to undergo reasonable exercise. This being so, it is evident that diabetic patients who are able to be about at all, should be encouraged to take all the out of door exercise possible. The amount of exercise insisted upon must not be sufficient to weary the patient excessively, as overexertion tends to reduce the powers of assimilation and to increase body waste, both of which results are directly opposed to the objects of the treatment. And as these patients are peculiarly liable to diseases of the respiratory organs, they should not expose themselves too much for the sake of sufficient exercise. When the weather is unsuitable for them to venture out, they may employ some simple gymnastics as a substitute for the out of door work. The slight fatigue from indulgence in proper exercise will often relieve the insomnia which sometimes persists even after the symptoms that caused it are under control, and thus enable us to dispense with more direct and less desirable remedies. In order to avoid the ill effects of sudden changes of temperature upon them, these patients should be advised to give unusual care to the protection of the skin, and to the increase of its activity. Woolen undergarments should be worn the year through, changing their weight but not their material with the season.

As tending further to reduce sensitiveness to climatic change, and to increase the activity of the skin and of the circulation, various forms of baths and of massage are useful.

Change of climate and scene, including visits to some American or foreign spa, is of service in suitable cases. A considerable degree of physical weakness or of disinclination to travel should serve as a bar to any recommendation of this form of treatment. For in undertaking such a journey patients must leave the comforts of their own homes and live at hotels where their special articles of diet are hard to obtain, and where the simplest requirements of invalidism are by no means easy to meet. Furthermore, the great mass of experience seems to show that only in certain classes of diabetic cases are mineral waters of much use, and to condemn the employment of this method as a routine practice.

It is peculiarly fortunate that diabetes mellitus is so largely a disease of the better classes, for such a regimen as is here outlined can hardly be carried out among the poor with any degree of thoroughness or any fair prospect of success.

Statistics show that, unlike many of the severer affections, the best results of treatment of diabetes are attained in private cases as opposed to those in the care of hospitals or public institutions of any kind. Special cookery carried to an extent sufficient to give variety and satisfaction to such patients, is practically beyond the province of a hospital of any grade.

In private cases the physician's time may be well spent in giving attention to all details of diet and hygiene. For every element of variety that can be allowed makes the necessary deprivations more endurable and the successful continuation of treatment more probable. Numerous receipt books are published, containing many ingenious combinations to vary the monotony of a diabetic's dietary. Some one of these can easily be put in the hands of those providing for the patient's table.

But even with the best regimen and most careful attention to detail, there are many cases in which diabetic symptoms still persist to a dangerous degree. In such cases there are certain drugs which are of service in more fully attaining the ends aimed at by diet and hygiene, and in meeting some of the special symptoms unrelieved by other means. Merely to name the remedies which have been recommended for this disease would prove a weariness to the flesh. And unfortunately this lengthy catalogue does not serve to show us the richness of therapeutic armament from almost any portion of which we may expect success, but rather to emphasize and make more painfully evident the more or less complete failure of every item on the list. The reasons for so formidable an array are easily understood.

Empiricism, while often useful, is rarely accurate. To this fact is attributable the presence of many drugs in the list, whose claim to usefulness is not supported by any adequate clinical testimony.

Another large but useless section of our catalogue is filled with the names of drugs which have been recommended either upon some purely theoretical hypothesis as to their action, or upon some erroneous theory regarding the cause of diabetes. In regard to this entire class we cannot do better than to follow Neimeyer's advice as set forth in his work on "Practical Medicine:" "We shall not discuss procedures," he says, "such as that whose object is to hinder the conversion of amylum into sugar by exhibition of acids, or that in which nitrogen is to be supplied to the system by administering ammonia; or in which it is sought to allay the irritation of the kidneys by means of opium; or to act upon the liver by means of ox-gall or gallic acid; or any of the other purely theoretical suggestions." "We are indebted to Griesinger for a positive experimental demonstration of the inefficiency, and in some cases even, the detrimental character of some of these modes of treatment, such as that by alcohol, rennet, and yeast sugar—intended to supply the place of that lost from the blood."

If, then, in the treatment of diabetes we accept the use of special remedies called for by the association with it of some particular diathetic tendency—as to gout or rheumatism, we find the list of serviceable drugs practically reduced to four, opium, arsenic, strychnine and alkalis.

The order of preference for these varies with different writers. But some three out of the four are spoken of as the best remedies at our command by almost every authority accessible to me.

Of none of the drugs mentioned have we any satisfactory explanation as to its precise method of action upon the causes or the manifestations of the diabetic condition. But in regard to all we have undoubted clinical testimony that in a large proportion of cases they are of service in relieving the symptoms present.

As to the dosage of these drugs in general, it may be said that the method which starts with small initiatory doses, gradually increasing until the symptoms disappear or until the limit of toleration is reached, seems better and safer than any other. The results from it are good, and certainly more agreeable for the time being, than those attained by an abrupt administration of large doses beginning well up toward the physiological limit and rising rapidly to it.

Alkaline Treatment.—Although the theoretical reasons which originally led to the use of this method have long since been shown to be unsatisfactory, high authorities claim good results in many cases. In fact, Flint states in his "Practice of Medicine" that he has "seen the good effect apparently of this treatment when there was not much restriction in diet."

Trousseau's method was to begin with a drachm daily of bicarbonate of soda, increasing gradually to three or four drachms a day. In order to avoid the bad effects of super-alkalinity he gave the remedy only ten days in succession in each month.

Alkalis may also be administered by means of certain spring waters, notably these of Carlsbad and Vichy. The use of these waters at home either bottled at the springs or artificially compounded, seems of doubtful service, as an exclusive method of treatment. Hence it is fair to assume that the change of climate and mode of life, the hygienic surroundings and the inducements to exercise and pleasure add a very large share to the success of treatment by this plan.

It is a common practice to recommend waters of this class for table use even when no real treatment by this plan is intended. It is possible that in doing this we may be giving our patients more than a pleasant beverage.

Opium Treatment.—In spite of Niemeyer's placing this drug, in the passage quoted above, among the obsolete theoretical remedies in the treatment of diabetes, it has a very wide repute and is regarded as our chief therapeutic reliance by many of the best authorities. Whether or not we rely upon it to lessen sugar excreted, it certainly is of use in relieving the thirst and dry condition of the skin. Opium itself may be given in some form, or preferably codeia in single large daily doses, or in smaller divided doses. The chief objections to its use are the unpleasant cerebral and gastro-intestinal symptoms which may occur, and above all the danger of the opium habit, especially as the drug must of necessity be given for some time. Codeia is in most cases less open to both these objections than is any preparation of opium itself, and the results from its use seem as satisfactory.

Strychnine Treatment.—This is also a frequently employed and highly praised method. In certain cases diabetic symptoms seem to be markedly relieved by it. The drug is usually administered in small repeated doses which may be conveniently timed to serve as a bitter tonic before meals. If good effects are not noted when fairly small doses are employed, there is little reason to expect doses more nearly reaching the physiological limit to be of greater use than the smaller ones.

Arsenic Treatment.—In the employment of this method arsenious acid itself may be used in pill form. But it is probably better to use either the liquid potassii arsenitis, or the preparation of bromide of arsenic known as Clemen's solution. The strength of these two solutions being identical, the dose of either is the same, and is preferably small and frequently repeated.

Earlier in this paper it was remarked as a fortunate circumstance that diabetes is so largely a disease of the better classes, because of the necessary elaborateness of its requirements for treatment.

From the standpoint of clinical study and accurate observation of its results this fact becomes a misfortune rather than a benefit. For private patients are not the ones upon whom we can readily conduct clinical experiments, or comparative study as to the effect of series of remedies. Hence the recommendation of one drug above another as an active agent in the relief of diabetic symptoms, if based upon experience in private cases, is justly open to serious questioning. One writer has gone so far as to say that: "no credit should be given to the claims of any drug, based upon the bare assertion that it has benefited or cured a case of diabetes in private practice." Hence it seems hardly worth while to make any recommendation in this paper tending to assert the superiority above the rest of any one of the four drugs which have been mentioned as likely to be of service in these cases. It is hoped that the realization of the facts may serve to accentuate in our minds the paramount importance of the dietetic and hygienic part of the treatment, resting as it does upon a thoroughly sound rational basis, as compared with the experimental and unreliable empiricism of the materia medica as applied to this disease.

In closing this paper allow me to say that it has been presented not at all as an attempt at a discussion of the subject in hand. It is offered merely in the effort to bring together in order those points in the treatment of diabetes which are the best ascertained and most universally accepted. And it is the hope of the writer that it may serve as the nucleus about which may gather individual experience of cases and individual methods for the solution of the complicated and interesting therapeutic problems presented by the treatment of diabetes mellitus.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Section on Orthopedic Surgery.

Stated Meeting, April 15, 1892.

HENRY LING TAYLOR, M.D., CHAIRMAN.

(*Concluded from page 650.*)

Discussion.

Dr. L. A. Sayre said that the paper covered too broad a field to admit of discussing it in detail, but in general, the author had expressed his own views most accurately.

Dr. John Ridlon did not consider that the element of time was very important, except in those exceptional cases where it was a difference between a few weeks and several years. On the principle of leverage, he had been able to reduce the deformity in some of the very worst cases of hip-joint disease in a few hours, or a few days, as safely by mechanical means, as by operation. It was only the question between a few days following an operation, and a few days more with mechanical treatment, and under these circumstances, we should not think of doing a cutting operation. In all cases of disease of the hip or of the knee, leverage reduction will accomplish the result as well as an operation.

Dr. S. Ketch said that while theoretically the orthopedic surgeon should be a good general operating surgeon, in practice, he is not frequently called upon to perform operations, and hence could not be expected to be as skilful manually as surgeons who are constantly operating; and on this account, a natural division of labor was founded. He inferred from the paper that the author must have met with a class of cases in which it was unusually difficult to reduce the flexion, for, as a rule, there was no special difficulty about reducing this deformity, provided sufficient time were allowed. Forcible leverage or stretching adds an unnecessary risk, as there is no way of accurately gauging the amount of force employed, and hence there is danger of inflicting traumatism which will result in lengthening the course of the disease, and causing a speedy return of the deformity.

Dr. W. R. Townsend thought there was one class of cases in which mistakes are likely to follow mechanical treatment, but which yield brilliant results after operation, viz.: the so-called periarticular abscesses. Such an abscess, situated outside of the hip-joint, often gives rise to symptoms simulating hip disease, and if not treated by operation, there is great danger of the abscess opening into the joint.

Dr. L. W. Hubbard enforced what Dr. Ketch had said about the treatment of deformity in the early stages, and he had found in his own experience, that the reduction was usually quite rapid. He had never seen a case of hip disease in any stage, where there was motion, in which the deformity could not be reduced by position and traction in a short time, usually not over six to eight weeks. He could not see the force of the remarks just made about periarticular abscesses, for they are just as likely to open externally as internally, and, as a rule, they heal quickly without operation.

Dr. H. W. Berg said that had it not been for careful attention to mechanical details, such important orthopedic appliances as the plaster jacket, the long splint, and the Taylor brace would not have been known, yet orthopedic surgery should be broad enough to include within its scope both mechanical and operative treatment.

Dr. N. M. Shaffer thought that many of the conditions described should necessarily come under the care of the general, and not the orthopedic surgeon. We are all agreed, however, that the orthopedic surgeon should be competent to perform all the operations of general surgery, just as he should be able to diagnosticate typhoid fever or the exanthemata, etc. But it did not follow because the orthopedist is prepared to perform these operations, or to diagnosticate the diseases coming under the care of the physician, that he *should do either the* one or the other, unless circumstances made it absolutely necessary for him to do so. Dr. Shaffer would have orthopedic surgeons devote themselves to the science and art of the mechanical treatment of deformities, using operative surgery as an adjunct to the mechanical work, rather than, as many of us are prone to do, make the mechanical part a sort of kite-tail to operative surgery. There is so much to be learned, and so much to be developed in the continually broadening field of mechanical treatment, that there seems to be no excuse for the present tendency of orthopedic surgery to invade the well recognized boundaries of general surgery. The tendency ought to be the other way, if orthopedic surgery is to succeed as a specialty.

Dr. R. H. Sayre said that orthopedic surgeons should be competent to take charge of a case from the beginning to the end, whether it required mechanical or operative treatment. Limiting orthopedic surgery to the use of apparatus is like limiting the oculist to the application of glasses for the correction of refractive errors.

Dr. Royal Whitman said that he was unable to see the force or the application of Dr. Shaffer's remarks on the paper of the evening. A specialist was so by reason of the class of cases he treated, not because of the means he employed. The broadening field for this specialty was the study of the etiology, development and cure of deformities; the study of the course, complications and ultimate results of joint diseases. Treatment must vary with the social environment of the patient, the severity and duration of the disease or deformity, and the most successful surgeon was the one who could best adapt the means to the end to be accomplished.

Early diagnosis and efficient treatment would, to a great extent, obviate the necessity for operation, and it was proper for one who could select his cases, to devote himself exclusively to mechanical treatment. On the other hand, many chronic and desperate cases of disease and deformity were brought to the institution with which he was connected, These patients would be neglected at home, and rejected at general hospitals. Mechanical treatment alone in this class was ineffective, unless supplemented by operation, which was often a necessary and a life-saving procedure. This exaltation of mechanics was opposed to the best interests of the patient, since, in the minds of many, mechanical and operative treatment, which are mutually dependent, were contrasted and opposed to one another; thus patients, on the one hand, were subjected to early and unnecessary operation, and afterwards neglected, and on the other, the benefits of legitimate surgical interference were not appreciated. Why a broader and, as it seemed to him, more rational view of the subject, need prevent the study and appreciation of mechanical supports, was not apparent. Believing that disease was to be treated in its entirety, and not in phases, he was unable to accept the limitation that Dr. Shaffer would impose on the future development of orthopedic surgery.

The Chairman said that if the orthopedic surgeon must be so familiar with operative methods, as undoubtedly he must, he must also be a competent neurologist, for just as serious mistakes would follow ignorance of this subject, as ignorance of operative surgery. Certain limitations are naturally placed upon one's practice, depending upon whether it is private, or dispensary, or hospital practice. for, in the latter, it is often not the best ultimate result, but the best that can be obtained within a limited time, or with limited means, that must decide the plan of treatment to be adopted. This author's directions in regard to the reduction of the deformity in joint disease, and especially in certain stages of hip disease, while perhaps successful with him, would be exceedingly dangerous if followed by the general practitioner.

Dr. Gibney, in closing the discussion, said that the great drawback to letting the general surgeon operate upon our cases is that we frequently lose sight of them, and they are accordingly allowed to go without the use of protective apparatus, and that careful treatment after operation which is necessary in all these cases to insure a good result.

Medical and Chirurgical State Faculty of Maryland.

Ninety-fourth Annual Session, held at the Hall of the Faculty, Baltimore, April 26, 27, 28 and 29, 1892.

Dr. Wm. H. Welch, President, in the Chair. Drs. G. L Taneyhill, R. T. Wilson and Wm. B. Canfield, Secretaries.

Dr. Wm. H. Welch delivered the President's Address, on the subject:

ACUTE LOBAR PNEUMONIA IN THE LIGHT OF BACTERIOLOGICAL INVESTIGATION.

The organism which is now generally conceded to be the cause of acute lobar pneumonia has had a variety of names, but the best is, in my opinion, the diplococcus pneumoniæ. It was discovered in September, 1880, by Sternberg, in his saliva, and was next described in December of the same year by Pasteur, who came on it in inoculating a rabbit with the saliva of a child dead with hydrophobia. In 1885, Sternberg showed the identity of the saliva organism and the diplococcus pneumoniæ, and in July, 1887, A. Fraenkel investigated the same organism. At this time there was confusion between the diplococcus pneumoniæ and the pneumococcus of Friedländer. This latter is a bacillus, the pneumo-bacillus of Friedländer; it is a totally different species, and probably has nothing to do with the causation of acute lobar pneumonia. Since this time the literature of the subject has increased wonderfully, and I shall not weary you by attempting to trace the subject from its beginning to the present time.

The pneumococcus is an organism, lancet-shaped or oval, with one end more pointed than the other, and it is called diplococcus lanceolatus from this shape. It is very variable; while the oval shape is the most common, it is not characteristic, and it is often spherical. It is usually found in pairs, two together; hence the name diplococcus. It may also occur in short chains, and occasionally in long chains. These long chains may be indistinguishable morphologically from the streptococcus, and may be even in colonies indistinguishable by our present known methods of culture. If the pneumococcus can occur under certain conditions in the form of chains, how can we decide whether it is the pneumococcus or a form of the streptococcus? This is the interesting point at present. This difficulty we are not likely to encounter in acute lobar pneumonia.

A characteristic point of difference is the presence of capsules around the pneumonia organism. These capsules are sometimes easily demonstrable, and sometimes not. The capsules were for a long time not easy to stain, but I have at last come upon a method which yields absolutely positive results in my hands. The presence of the capsule pertains to the organism only in relation to the tissues and organs of the body, and the capsule is not demonstrable in organisms from cultures. The organism dies in large numbers in the body. In the exudate of pneumonia it is astonishing to find how many of these organisms are present. The three distinguishable points of the pneumococcus are expressed in the name, pneumococcus diplococcus lanceolatus capsulatus. In cultures the pneumococcus grows best at a temperature approaching the body temperature. For this reason gelatine is not so good a medium, as it melts at a low temperature, and this is one reason why Friedländer failed to find the organism, because he used gelatine. In cultures they will not grow, usually, at a temperature below 65° F., but when they have been transplanted they will grow at lower temperatures. They grow on almost all of our nutrient media; nevertheless, there is no other known organism that possesses such a wide range of growth, that is so particular as to the exact composition of the medium on which it grows as the pneumococcus. The medium should always be carefully tested before, for a very little thing wrong in the composition of the nutrient medium will lead to a failure in the culture of the organism. The properties of the medium which are best adapted for the growth of the organism are, first, its reaction. It should be slightly alkaline, and it should be made up of the right sort of peptones. Merck's peptones are the best. These two points can be watched with considerable regularity, but the difference which the different kinds of beef make in the cultures is very hard to understand.

It is not necessary to describe the growth of the organism. It grows best at a high temperature, and in an incubator at body temperature. It does not liquefy gelatine, and grows preferably in agar-agar. Its growth in agar-agar is not easy to see. It coagulates milk, and grows as well with as without oxygen. As a rule, the more virulent the organism, the more difficult to cultivate. A very important characteristic is its short vitality. No other organism dies so easily. It dies in less than a week, and has died three days after it was planted, and after two weeks it is non-virulent. The best culture medium is a mixture of agar-agar and gelatine. It is impossible to keep the virulence of the organism for any length of time. The disease-producing power or pathological power of the organism is very short and generally variable, and some have no virulence. Some kill rabbits within twenty-four hours. The pathological effects of the organism depend on four different factors: 1, the animal itself; 2, the degree of virulence of the organism; 3, the number of bacteria which get into the body; 4, the site of the inoculation.

The animals which are most susceptible are rabbits and mice. Mice are more apt to die with material containing the pneumococcus than rabbits, the latter not infrequently surviving the inoculation. Guinea pigs are relatively insusceptible. There is a difference in different species, and in different animals of the same species. The number of bacteria inoculated makes a difference, and from this there is a variability in the pathological effects. This is not so true with the virulent bacteria as with the less virulent. We can produce different effects on animals with the size of the dose. The site of the inoculation is also very important. The animals usually die sooner when the organisms are injected directly into the blood and peritoneum, and they live longer when the organisms are injected subcutaneously.

The symptoms are fever, diarrhœa and albuminuria. The elevation of temperature is almost constant. The organisms invade the blood shortly before death, and it is the poisonous products of the organisms in the blood that cause death. The urine of rabbits is normally albuminous. but slight in amount. In this case the albumen is very abundant. There is acute pulmonary œdema, which may also cause death. These are the usual pathological effects of the organism. In the type more characteristic of the acute symptoms, the animal dies within forty-eight hours, the spleen is enlarged, there are necrotic foci in the liver. It is interesting to note that these necrotic foci have also been found in the liver of human beings who have died of pneumonia. There is an alteration in the kidneys in the majority of cases, and a filling up of the renal glomeruli with fibrin, making a sort of fibrin thrombosis. This has also been demonstrated in human beings. The heart is nearly always fatty, and the lungs œdematous.

A second type of the disease is when the animal lives from five to ten days, and when there is a very extensive fibropurulent exudate along the subcutaneous abdominal walls. In this case no organisms can be found in the body, and the exudation along the abdominal walls where the inoculation was done prevents the organism from getting into the body—evidently a case where nature throws out a protective wall to keep the invading organisms out. In this case there is a tendency to an inflammation of the serous membranes. There is little septicæmia, and while the pneumococcus is in the subcutaneous tissues there is no organism in the body or blood.

In a third type of the disease there is a formation of localized abscesses. The diplococcus pneumoniæ is a more or less pyogenic organism. These abscesses may be large or small, but they do not usually cause the death of the animal.

A final form of the disease is that in which the animal has died not from infection, but from intoxication. In one case an inoculated rabbit died in two days, and a second rabbit inoculated from the first died in sixteen days. In the first animal the organisms were found in abundance, but in the second animal only empty capsules of the organism were found. This rabbit had died from intoxication; was killed by a poison left by the organisms, which had all disappeared. This is called pneumotoxine. This is a chemical poison produced from the pneumococcus. This poison is not a ptomaine. It is not a crystallizable, alkaloidal substance, but it is albuminous and proteid. It has never been isolated in a pure state. The power of these poisons is very great, and the local action is due to them. This is probably the cause of the filling up of the lungs with exudate.

We can render animals immune. Inoculation with a small quantity of a virulent culture, with a larger quantity of a weaker culture, or with the substance itself, will protect the animals for a time or make them immune. The protection of the animals is due to the formation of a special substance which is undoubtedly in the blood. It is called the immunity-producing substance.

The diplococcus pneumoniæ is the only organism which is constantly present in this disease. We can reproduce the disease in animals. It is sufficient to cause an exudate in the body. This new substance is in the blood at or after the crisis, and was not there before the crisis. This has been proved in human beings. Is it the sole cause of pneumonia? This is *sub judice*. In my mind, I think it is the only cause. It is unreasonable to think that a disease which runs a course so universally the same can have several causes. There are two arguments against the diplococcus. One is the finding of other organisms in the disease, and the other is the failure to find the diplococcus. Other organisms do get in the lung, but that is natural.

It is not easy to find the organism. We may use several ways: 1. Examine cover slips. 2. Always inoculate two animals, a rabbit and a mouse. 3. Make cultures. Many have relied on only one of these procedures. Negative cases may occur. The origin of the disease is hard to name. There may be two modes of infection. The organism is widely distributed. It is frequently found in the mouth of healthy individuals (about 20 per cent.) and in those not having pneumonia. Lowered vitality may invite an attack of the disease. Epidemics show that infection must sometimes take place from without. House epidemics occur and here the disease is very limited. There may be sthenic and an asthenic pneumonia, as there may be an infective and a toxic pneumonia. The organisms possess both properties. The inflammatory exudate is a protection. The pneumonia itself is not the danger. The exudate keeps the organisms out of the body. The general symptoms, the action on the heart and kidneys and the nervous system, these we must think of as due to the specific poison. The crisis is coincident with the appearance in the blood of a new substance which kills the disease if the patient recovers. Up to this time the poison has been in the blood, but the appearance in the blood of this antidotal substance causes the crisis and the poison is no longer found there. The crisis does not cause any change in the lungs. They are just as congested and hepatized after the crisis as before. It is the substance in the blood.

Treatment.—The general treatment is altogether too mechanical. It was supposed that the congested lungs offered too great resistance to the weak heart and the object of clearing up the lungs was to relieve the heart and help the breathing. It has been shown experimentally by tying off a part of the lung in a rabbit that this mechanical obstruction is not sufficient to produce the effects of pneumonia. The question is, can the immunity-producing substance be utilized to treat this disease? Experiments are now in progress to answer this question. They are not to be reported on yet. We have an opening up of a new subject that cannot fail to be of great use to medicine. The study of the chemical substances in the body and their use in preventing and causing disease is a very broad question. I believe we are on the verge of a new discovery.

Section on Surgery.

Dr. Robert W. Johnson read a paper entitled

THE SURGICAL CARE OF WORKMEN,

in which he spoke of the importance of surgery as applied to the working class. He discussed the operations principally of the extremities, and urged the operations which would give strength rather than beauty, and based his experience on a large number of cases seen at the Maryland Steel Company.

Dr. Randolph Winslow objected to some of the amputations on the ground that amputations higher up would be better and would allow the adjustment of an artificial member.

Dr. Johnson replied that most of the men were not in a condition to purchase expensive artificial members.

Section on Practice.

Dr. C. O'Donovan read a paper entitled

MENINGITIS IN CHILDREN FROM A CLINICAL STANDPOINT.

It was early called hydrocephalus from the serous effusion, but this is only a part of the disease.

The two kinds are (1), simple, and (2), tubercular. This is the simplest classification, but further divisions have been made. The diplococcus pneunomiæ has been found in the serous membranes in this disease. The simple is the more frequent form under two years of age, from which time to puberty the tubercular predominates. Simple primary meningitis does not occur according to some, and does according to others. It usually follows some diseases. The diagnosis is not easy, and is often only made after death. The history of the disease is familiar to many, but it is so often not recognized until too late. He related a case in which the disease came from an injury and he did not recognize it.

1. Meningitis is of frequent occurrence and is insidious in its onset.
2. It is most amenable to treatment at the beginning. Cases do not recover late. Tubercular meningitis will not yield to treatment.
3. The treatment is quiet, blood letting, free purgation, ice caps, bromides and iodides, and good attention. Even in this case recovery is not frequent.

SECTION ON GYNECOLOGY AND OBSTETRICS.

Dr. L. E. Neale read a paper entitled

NOTES ON THE USE OF CHLOROFORM, ERGOT AND THE DOUCHE IN OBSTETRIC PRACTICE.

He did not believe in the too frequent use of chloroform, but occasionally did use it to the point of obstetric analgesia. He used it in all operations. He used ergot when the uterus was empty. He was not an ardent advocate of the douche.

Dr. J. E. Michael thought that Dr. Neale had struck the proper keynote. The obstetrician does as a rule use chloroform, and there must be a reason for this. Fordyce Barker had written a very good paper on this subject. Within the uterus it has a bad effect on the child and promotes *post partum* hæmorrhage. The attainment of obstetric anæsthesia is very important, for we must recognize that there is a surgical and obstetrical anæsthesia. In some cases it may be necessary to have a surgical anæsthesia, but it should not be used as a rule. Ergot as generally used does more harm than good.

Dr. P. C. Williams did not think that the abuse of a good article was a good argument against its legitimate use. He agreed with both speakers. It is much easier for a man to argue on this question than for a woman. He did not think that chloroform increased the difficulties of labor, and it diminished the activity of the pain. He has had cases where the chloroform helped the child to be delivered.

Dr. Hunter Robb agrees with Dr. Neale, and does not think we should use chloroform so often except in operations. He did not think it was well to use antiseptic douches in the uterus or even in the vagina. It causes a necrosis of the lining membranes of the genitalia and increased the chances of infection. Keep the external genitalia as clean as you can.

Dr. Thomas Opie agreed with Dr. Neale and thought that as a rule, all anæsthetics were dangerous. Morphia and chloral allay pain more satisfactorily than chloroform, and when chloroform is once given it must be kept up for a long time. It lengthens the intervals between the pains, but there is a much greater danger of hæmorrhage. When there is anything in the cavity of the uterus, ergot is contra-indicated. When it is empty we may use it. He does not like the douche.

Dr. A. B. Price had used the carbolic acid solutions as injections into the uterus. He did like ergot when there was danger of *post partum* hæmorrhage before removing the placenta.

Dr. W. E. Moseley had never seen reason to regret the use of the intra-vaginal douche. It is certainly cleansing and what is also very important, it makes the patient more comfortable.

Dr. Wilmer Brinton was surprised that some used ergot in the third stage of labor in such a routine way.

Dr. R. P. H. Ellis said if we want to give ergot to be effective, we should always give it hypodermically. He did this regularly. When he gave chloroform, he had reason to fear hæmorrhage.

Dr. Hunter Robb read a paper entitled

THE USE OF MORPHIA AND OTHER STRONG ANALGESICS IN GYNECOLOGICAL PRACTICE.

The general practitioner is apt to give morphia when certain gynecological troubles are not relieved easily, and even some gynecologists resorted to its use in pelvic inflammation where there is great pain, myomata and various other painful disorders. In some cases he advocated opening the abdomen and breaking up the adhesions which soon removed the pain and did away with the use of morphia. Avoid morphia, but if it must be used even for a short time do not let the patient know what she is taking. Use substitutes when possible.

Dr. A. K. Bond had noticed articles on this subject in the journals and thought it was very important to find good substitutes. He had been giving aconite a thorough test of late and found it a very valuable remedy. If we write our prescriptions for morphia and such drugs, the people soon learn to read them and know what they are taking. He always took his morphia and left it with the patient when necessary.

Dr. Jesse Downey put great reliance on his hypodermic syringe, and would give up the practice of medicine without it.

Dr. P. C. Williams related a case of "A Case of Extra-Uterine Pregnancy," and a case of "Lateral Flexion of the Pregnant Uterus Simulating Extra-Uterine Pregnancy," which were discussed by Drs. Neale and Michael.

Dr. J. H. Kennedy read a paper on "Abortion—Its Effects when Not Treated at All, or Treated on the Expectant Plan."

SECTION ON MATERIA MEDICA AND CHEMISTRY.

Dr. J. T. Smith read a paper entitled

THE SPECIFIC ACTION OF DRUGS,

in which he spoke of the meaning of the word specific and the desire to find specific remedies for all diseases. There is a great field for bacteriology. The chemistry of the body is very important. Bacteria of the intestines are more accessible and easily classed.

Dr. Wm. H. Welch thought the paper was very suggestive. He referred to the work done in Koch's laboratory. We have in our own bodies agents which are active poisons, and we have also their antidotes. The peptones, for example, are an active poison when inoculated into some animals, and yet they do not harm us, which shows that we must have within us an antidote which protects us. It has been thought from some experiments performed in extirpating the thyroid gland, that that gland acts as an antidote to some body poisons. This bears some relation to the condition known as cachexia strumipriva. An animal always dies when this gland is removed and the removal of other glands may have a similar result. If we cultivate certain bacilli, as the tetanus bacilli, on a culture medium made of the thyroid gland, it does not act as a poison as it does when cultivated on other media.

SECTION ON SANITARY SCIENCE.

Dr. E. F. Cordell read a paper entitled "The Necessity of a Public Disinfecting Station in Baltimore; and the Use of Steam Under Pressure as a Disinfectant."

Dr. Wm. H. Welch thought that the subject was of great practical importance, and that steam was the great disinfectant. Sulphur is often too much relied on. He told the story of how Koch was fumigated with sulphur fumes on his way from Italy to Germany, and how a cholera culture which he had in his pocket was not at all affected by the sulphur. Sulphur may destroy the germs of small-pox, measles, scarlet fever, but we know nothing of the germs which cause these diseases.

Dr. C. Birnie did not think much of sulphur as a disinfectant.

Dr. W. Frank Hines said that sulphur was better when used in a moist atmosphere. In most diseases it was best to try to kill the germs before they got about abroad. We should disinfect the patient as well as the attendants, and, where feasible, burn everything possible.

Dr. Wm. H. Welch did not think that sulphur fumigation was useless against small-pox, etc., and he referred to the careful work of Dr. Cyrus Edson, of New York. He used other methods, and thought that whitewash was a disinfectant of no mean power, and heat in all forms was effective. It is hard to say how sulphur acts, but it is necessary to have moisture, for in a dry atmosphere it is almost useless, and delicate fabrics are damaged by the dry fumes.

Dr. J. H. Branham read a paper on "A Consideration of Some Irregular Positions of the Child in Utero, with Illustrative Cases."

Dr. W. B. Platt read a paper entitled "Inspection of Milk and Dairies," in which he said that in a city like Baltimore, of 500,000 inhabitants, there were 50,000 children under four years of age who depended on milch cows' milk as a food. It was, therefore, important that an inspection of this food should be made. The principal dangers of conveying disease through milk were tuberculosis, typhoid fever and scarlet fever.

Dr. J. C. Henneter then read two papers entitled "Concerning the Significance of Phagocytosis" and "Experiments on the Anabolic Function of the Vagus."

SECTION PSYCHOLOGY AND MEDICAL JURISPRUDENCE.

Dr. Henry M. Hurd then read a very interesting paper on

POST-FEBRILE INSANITY.

This was not a new topic. It was first spoken of in 1845. There are many varieties, but one brain condition, which bears no relation to the disease which produces it. These insanities after acute diseases are alike in nature. The name, confusional insanity, was suggested to cover all the kinds of insanity. The three principal forms are those from shock, from specific poisons, and from anæmia, nervous exhaustion, etc.

Shock is a very frequent cause of this post-febrile insanity. It may come from childbirth, surgical operations, etc. There may be a fixed delirium.

Insanity may also come from the specific poisons, from the fevers, pneumonia, uræmic poisoning, influenza, belladonna, iodoform, chronic alcoholic poisoning, and puerperal fever. The poison acts on the central nervous system. These poisons produce an active delirium, which is self-limited, and stops when the drug is stopped.

The third cause is from anæmia and nervous exhaustion. There are delusions of fear and apprehension, perversions of taste, progressive stupidity, and general mental impairment. This may come from typhoid fever. The actual predisposing causes of the delirium are not clearly known. Fixed ideas are impressed on the brain, and cause this insanity. He gave three illustrative cases, from which it was evident that we are not justified in giving any one cause to the whole class.

Out of 23 cases, 11 came from typhoid fever; in 4 the insanity was in the form of delirium, and in 7 it came after the fever was over; 8 recovered, 2 died, and 1 did not recover; 9 of the causes were surgical. Insanity may originate from delirium, and in other cases heredity plays an important part. General practitioners do not see many cases, and are apt to give a good prognosis, while alienists see many cases, and give a bad prognosis, because they see so many fail to recover which the general practitioner loses sight of. Some, too, are called cured cases which have enfeebled minds.

Prolonged delirium adds greatly to the gravity of insanity. For this reason, the Brand treatment of typhoid fever to reduce the fever should be advocated. Few patients treated in this way have post-febrile insanity from typhoid fever. It removes a factor of the danger. Rest is also very important after this disease. The patient should not sit up too soon, and no company should be allowed too soon, and there should be no mental strain, and above all things, such convalescents should not be allowed to go too long without food.

Therefore, the general treatment of this kind of insanity is the removal of the cause, rest, quiet, plenty of sleep, massage, good food, and *no asylums, if possible.*

Dr. Harry Friedenwald has seen a number of cases of acute mania after cataract operation, and it has been attributed to bad treatment of the eyes and being in the dark room too long.

Dr. H. M. Hurd was quite familiar with that class of patients, and thought the mania was due to the instillation of atropia. He had seen such cases which got well when the atropia was stopped. He recalled two such cases. This is a toxic insanity. One case was treated for epilepsy; she had wild delirium in the night, and broke everything in the room. It was found that stopping the use of belladonna, which she had been taking, cured the disease.

Dr. C. G. Hill recalled a case of insanity from belladonna, which was stopped, and the disease got well. He thought, too, that post-febrile insanity was also due to some innate susceptibility of the patient. Many pass through fevers, operations, etc., and do not have this insanity. It need not be inherited. Some cases occur on the slightest provocation.

Dr. J. C. Harris asked how he treated these typhoid cases that were followed by this delirium.

Dr. George H. Rohé was glad that he spoke of insanity following unusual causes, as puerperal fever. He had been investigating puerperal insanity and the connection of the sexual organs. Cases followed erysipelas. It is a question whether he should class here insanity from sun-stroke. In insanity from operations he thought it was not from the operation but from the woman's condition.

Dr. H. M. Hurd, in closing the discussion, had never heard of a case of post-febrile insanity following typhoid fever which had been treated by the Brand method. He classes sunstroke with the traumatic diseases; it is a meningitis. It would be of great service if the physician would bear in mind the delirial effects of certain drugs. He related a case of a man to whom the physicians had given so much salicylic acid that it had made him temporarily insane and they wanted to put him in an asylum. He was cured by stopping the drug. He related similar cases with the iodide of potash and atropia.

Dr. S. J. Fort read a paper on "Diet and Exercise in the Treatment of Epilepsy."

Dr. H. M. Hurd said he had found out that the means of treating epilepsy as suggested by Dr. Fort was much better than with drugs. It was not only necessary to have a varied diet, but the time of eating should be fixed. Epileptics usually eat too often. They should eat their last meal long before they go to bed, that is six to eight hours before. It is better too for them to eat only two meals a day. They should also take all their sleep at once and not take naps in the day time, for the unquiet rest of the day and the uncomfortable positions are apt to bring on an attack of the disease.

Dr. C. G. Hill then read a paper entitled "Some Hints on the Relation of the Sexual Organs to Nervous Disease."

Dr. H. M. Hurd said there were two opposing camps, the gynecologists and the alienists; each one thought their specialty was caused by the other. He thought that every asylum should have a gynecologist on its staff.

Section on Ophthalmology, Otology and Laryngology.

Dr. S. K. Merrick read "A Review of the Literature of Laryngology during the Past Year."

Dr. G. W. Thomas read a paper entitled "The Relation of Nasal Surgery to the Treatment of Nasal Disease."

Dr. Harry Friedenwald read a paper on "Opening of the Mastoid Process."

Dr. Hiram Woods read a paper on "Diphtheritic Conjunctivitis."

Dr. J. J. Chisolm read a paper entitled "The Dislocation of an Opaque Lense—Nature's Rare Method of Restoring Sight to a Cataractous Patient."

Dr. P. C. Williams related a very interesting case of

THE EXPULSION OF AN IMMENSE GALL STONE UNDER THE ACTION OF CHLORAL.

He had attended an old lady of 72 for the grippe and she had apparently recovered. A short time after, she ate imprudently and had what appeared to be an attack of cholera morbus. He used prompt measures and everything was stopped except the vomiting. She had a slight pain over the abdominal region and on examination he found a well defined tumor in the region of the ileo-cæcal valve. He thought it was an intussusception. He recalled a case in which he had given 40 grains of chloral every two hours for what was an intussusception with good results, so, in this case, he gave 30 grains every two hours and as the vomiting still kept up, he gave it per rectum combined with two drachms of the fluid extract of senna; at the end of 48 hours she was relieved, and the daughter who was watching the case gave him on his next visit the gall stone which he showed to the society. It measured 1⅝ inches in length, 1¼ inches in diameter and 3⅝ inches in circumference. It was the largest he had ever seen. The weight he had not taken. He had thought it had ulcerated through the bile duct and had plugged up the ileo-cæcal opening and the chloral probably relaxed the intestines and the senna hurried it on. It only shows that it is not well to be too precipitate in operating for intussusception.

Dr. A. C. Pole said that he had reported a similar case not long ago. The stone in his case weighed 200 grains, and he had thought it was ileus and had given extract of belladonna and podophyllin.

At the evening session, Dr. Frederick E. Lange, of New York, delivered the annual oration on the subject

THE PATHOLOGY AND TREATMENT OF ACUTE SPONTANEOUS OSTEO-MYELITIS.

Osteo-myelitis is comparative a recent nosological conception. Chassaignac first described it as we now understand it in 1854, but it is of interest to note that Nathan Smith, who flourished in 1798, described this condition, and his son Nathan R. Smith, in 1834, in the history of his father gave a very good description of this disease long before the French writers thought of it.

It is a disease which begins very slowly and is often not suspected. In this country the disease is rare, and it is also rare in some parts of Germany and Switzerland. It is not often recognized. It occurs in young persons and attacks the juxta epiphyseal portions of the long bones. The neighboring joints are involved. In 1884, Becker described a coccus, and later Rosenbach described an organism. The type of the disease is an acute infectious disease of specific character, and Rosenbach thought that this organism was the specific organism of the disease. Krause found the same organism in carbuncle of the neck. The pathogenic organism gets into the circulation either through the skin or the intestinal tract. It may occur in a healthy subject of the growing age and may come after injury, exertion, etc. The patient complains for a day or two of pain in an upper or lower extremity near one of the large joints, then a little time passes and the general disturbance comes on.

It may assume a typhoid condition, and then the patient cannot call attention to the trouble and it is treated as if it were typhoid fever. The bone feels as if it were broken. Again it may be like acute articular rheumatism and is a pseudo-rheumatism, and it may go on to abscess and necrosis of bone. The epiphyses of the femur may become necrotic and we may have a chronic bone abscess, a specimen of which he showed. There is a tendency of the patient to get over the primary and get secondary affections of other bones.

The system of such patients seems to be under the influence of some slow poison and exhaustion and disintegration take place, and the rest is much disturbed at night. An operation gives the only hope of doing good.

Dr. L. McLane Tiffany was elected president for the next year, and 117 new members were added to the list.

Philadelphia County Medical Society.

April 27, 1892.

Vice-President Charles H. Thomas in the Chair.

Dr. Solomon Solis-Cohen read a paper entitled:

SHALL PHYSICIANS BECOME SALES-AGENTS FOR PATENT MEDICINES?

Section 4 of Article I of the By-laws of the Philadelphia County Medical Society reads as follows:

"Any physician who shall procure a patent for any instrument of surgery, or who sells or deals in patented remedies or nostrums, or who shall give a certificate in favor of a patented or proprietary remedy or patented instrument, or who shall enter into an agreement with an apothecary to receive pecuniary compensation or patronage for sending his prescriptions to that apothecary, shall be disqualified from becoming or remaining a member."

Article VIII of the By-laws of the Philadelphia County Medical Society accepts as an integral portion of those by-laws, the Code of Ethics of the American Medical Association.

A section of that Code of Ethics treats "of the duties of Physicians to Each Other and to the Profession at Large." Article I of that section sets forth "Duties for the Support of Professional Character." Section 3 thereof condemns open or underhand advertising as "derogatory to the dignity of the profession." "These," it says, "are the ordinary practices of empirics, and are highly reprehensible in a regular physician." Section 4 continues:

"Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine, or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or of others. For if such nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality, and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them."

To the clearness and force of this dictum nothing can be added. Its wisdom and justice are beyond dispute.

It is unfortunately true that much of our therapeutics is as yet empirical. Nevertheless, the best endeavors of the true physician are directed toward establishing a rational basis for that which experience has proved to be beneficial; toward obtaining scientific data by which to make progress to a therapeutics not empirical; and toward eliminating from the traditional heritage of the profession such measures as may have had their origin in superstition or mistaken observation. To use preparations of unknown composition; to use mixtures of innumerable substances, some directly opposed to each other; to use even rational and known combinations of which the ingredients and proportions have not been adjusted to the indications and conditions of the individual case—are certainly not scientific methods or practices likely to advance rational therapeutics.

That much of the flavor of the mystery and witchcraft that at one time appertained to the practice of the healing art should have survived among the vulgar, is only a phenomenon to have been expected in the natural course of social evolution. Hence it is that homœopathy, and mind-cure, and patent medicines, have so powerful and so profitable a hold upon the purses of the community, and this not alone among the ignorant and the unlettered. It is a notorious fact that the clergy—presumably educated and intelligent men—are among the most prominent and persistent givers of testimonials to the virtues of advertised nostrums, and medical men and medical journals have long made the religious press a target for satire and invective, because of the hold that the advertising quack has secured upon its columns.

In an address to the Medical Society of the State of Pennsylvania at its last meeting, in calling attention to the alliance between the secular press and the empirics and nostrum-venders, I felt justified in saying that the publishers of magazines and newspapers that allowed themselves to advertise the curative virtues of this or that ready-made preparation or alleged remedial measure, to be applied indiscriminately to all cases—whether of one disease or of many diseases—were accessories to a crime against the unfortunate and the helpless; not alone because of the money filched from the pockets of those deluded by the false promises held out to them; not alone because of suffering unrelieved and lives deprived of their chance for prolongation; but in many instances because of the disease and suffering and death directly produced by the poisonous compounds and noxious gases administered to any that chose to purchase. If such criticism was justified—and who is here that will deny its truth?—if such criticism was justified when applied to those who make no pretence of special knowledge or of devotion to a noble art—to those whose object is solely and avowedly commercial—what language remains to characterize the action of medical journals that permit the insertion in their columns of advertisements such as these that I pass around? What severity of reprobation is adequate for the conduct of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION? What words of condemnation are strong enough for the physician that permits his name to be associated with these devices of the devil?

The frankly unscrupulous patent-medicine vender, the maker of "Safe-cures," or "Temperance Bitters," or "Sure Specifics," is at least to be commended for what, to paraphrase a remark of Senator Benjamin Harrison's, may be termed his "bold brutality." His allegations of philanthropic motives are not intended to be believed; they deceive no one—they are the recognized *ad captandum* devices of the cleverer advertiser—and, in the sale of his wares, there is no pretence of examination, or of diagnosis, or of prescription based on diagnosis.

Far more iniquitous and far more dangerous to society is the wily manufacturer that advertises "to the profession only." Whether he ostentatiously holds secret the composition of his nostrum, or whether with pretended frankness he describes it with an appellative that means nothing, or publishes a formula that cannot be carried out, his object is the same; he seeks to make the physician's the hand whereby he may reach pockets shut from the coarser methods of the Warners, the Pinkhams, and the Jaynes; for, after all, it is the minority that can be deluded by the flaring posters of "Wizard Oil," or the lying testimonials of "Tonic Vermifuge." When a sick man applies to a physician, thinking that thereby he will secure the benefit of special knowledge brought to bear upon the conditions of the individual case, entrusting to the conscience of his medical adviser his health and his life, he is entitled to the skill and the thought for which he pays, and that he deems himself to be receiving. He certainly deserves better treatment that to be handed over to the mercies of "antikamnia," or "febricide," or "quickine," or "gleditschine," or "Freligh's tablets," or "Listerine," or any other of the unholy crew. If such is to be his fate, let him have the satisfaction of buying the worthless or poisonous stuff direct, without the sham of a professional consultation, and without paying purchaser's commission to the medical sales-agent.

At the coming meeting of the State Society I purpose offering the following resolutions, for which I ask the support of this Society:

Resolved, That the Medical Society of the State of Pennsylvania hereby expresses its highest disapprobation of the practice of giving certificates or testimonials to secret preparations alleged to be of medicinal virtue, and calls the attention of the affiliated county societies to the fact that such action on the part of members of the said societies is in derogation of the dignity of the profession, and in violation of the letter and the spirit of the Code of Ethics of the American Medical Association and of this Society.

Resolved, That this Society likewise expresses its disapprobation of the practice of inserting advertisements of secret preparations in the columns of medical journals, such action being an insult to the intelligence of the profession, and a degradation of journals indulging therein to the level of the patent medicine almanac. Especially to be condemned is the action of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in admitting such advertisements.

Resolved, That copies of these resolutions, duly attested by the permanent Secretary, be sent to all county societies in affiliation with this Society, to the American Medical Association, to State medical societies in affiliation therewith, and to the publishers and editors of American medical journals.

On motion of Dr. J. Madison Taylor, the resolutions were adopted as the sense of the Philadelphia County Medical Society, and the delegates to the Medical Society of Pennsylvania were instructed to officially present and support them.

NECROLOGY.

DR. RUTSON MAURY, of New York City, died May 5, aged thirty-seven years. He was born in North Carolina, the son of Captain W. L. Maury, lately of the Navy and of the Confederacy. He was an alumnus of New York Free College and Bellevue Hospital Medical College, passing first at the competitive examinations. Hospital work at Bellevue next engaged him for two years; after which he settled in practice, becoming associated with Dr. W. T. Lusk. Less than a week before his death he was attacked by pneumonia. He was removed to St. Luke's Hospital, and at that place died in the prime of his early manhood. He was a member of the New York County Medical Association and other organizations.

Dr. Charles F. Stillman, formerly of Plainfield and New York City, and latterly of Chicago, died at the first named city on April 30. He was prominent as a teacher and writer on topics relating to life insurance. He is said at one time to have held a chief examinership in one of the great companies, which yielded a salary of $15,000 per annum. He was a graduate of Rutger's College and of the Columbia College Medical Department, class of 1876, and held lectureships at the Woman's Medical College of the New York Infirmary and at the University of Vermont. His fatal illness is reported to have been acute pulmonary tuberculosis, supervening upon a pneumonic attack which occurred last winter. He joined the American Association in 1876, and contributed elaborately illustrated articles on orthopædic surgery to one or two of the later volumes of our old series of Transactions.

Dr. Thompson Burton, of Fultonville, New York, died May 4, 1892, about eighty years old. He was a graduate of Castleton Medical College in the year 1835; member and ex-president of the Montgomery County Medical Society. He was a great believer in the power of associated labor, and was frequently to be seen at the annual conventions of State and National organizations. He was a member of the American Medical Association from 1880.

Dr. Hiram H. Tichenor, a member of the Association since 1880, died at his home at Newark, New Jersey, May 2, aged sixty-four years. He was a native of Newark, and one of its best known practitioners for forty years. He was prominent in musical matters, as well as medical; president alike of the Madrigal Club, the Orpheus Singing Society, and of the Essex County Medical Association; manager, also, in one of the savings banks, and member of the Board of Trade. He was graduated in 1854 from the University Medical College, New York, receiving awards and certificates for special proficiency in surgery and obstetrics. He was Professor Bedford's clinical assistant for one year, before going back to Newark to settle down for his life-work in his native town. A widow and three daughters mourn his departure.

BOOK REVIEWS.

A Practical Manual of Diseases of the Skin. By George H. Rohe, M.D., Professor of Materia Medica, Therapeutics and Hygiene, and formerly Professor of Dermatology in the College of Physicians and Surgeons, Baltimore, etc. Assisted by J. Williams Lord, A.B., M.D., Lecturer on Dermatology and Bandaging in the College of Physicians and Surgeons; Assistant Physician to the Skin Department in the Dispensary of Johns Hopkins Hospital. *No. 13 in the Physicians' and Students' Ready Reference Series.* In one neat 12mo volume, 303 pages. Extra Cloth, price $1.25, net. Philadelphia: The F. A. Davis Co., Publishers, 1231 Filbert St.

Dr. Rohe is not only a very versatile writer, but the productions of his pen have always a very practical flavor that commends them to the student and practitioner. The present volume presents the essentials of diseases of the skin in a very convenient and readable form. It is fully up to the times, and to the medical student especially will prove of great service.

A Treatise on Diseases of the Genito-urinary Apparatus. By J. W. S. Gouley, M.D. New York: D. Appleton & Co.

Dr. Gouley has given us an excellent treatise on diseases of the genito-urinary organs, but has marred it somewhat by mannerisms and peculiarities of nomenclature that savor a trifle of affectation. They certainly do not add to the practical value of the work. But Dr. Gouley's reputation will stand the publication of a few peculiarities. We cordially endorse the book.

Medical and Surgical Gynecology. By S. Pozzi, M.D. Vol. II. New York: Wm. Wood & Co.

This is the completion of the most elaborate and systematic treatise on gynecology ever published. Volume II is fully up to the standard attained by the first volume, and will be warmly welcomed by subscribers to the work. It is pleasant to note that medical publishers are devoting some attention to the artistic as well as the scientific merits of their publications. Pozzi's work is certainly a handsome production.

The American Medical Association.—Detroit, Mich., has been selected as the place of meeting of The American Medical Association this year, and the time is Tuesday, June 6, as the opening day. Detroit is a beautiful city of about 150,000 inhabitants, situated on Lake Erie. It will be particularly attractive for a meeting place at that season, because it is freed from the relaxing and depressing influences of summer heat by the magnificent and bracing breezes from the lake. This city is a little more centrally located than the place of meeting last year—Washington—and for the reasons given, if for no others, there should be a larger attendance.

The American Medical Association is growing in numbers and strength each year, as it deserves to do. It is the National Medical Association of the United States, and for that reason alone every physician should take a personal pride in its prosperity. True, it has some defects. Is there a medical society without them? True, some physicians will not acknowledge it to be the national society, but they can not refer you to one that has a better claim to that honor, nor to one in which the profession is more nearly represented.

The men who belong to and are interested in the welfare of this Association are certainly very desirous that it should be the representative society of the nation and would appreciate not only the support of those who believe that it is not and desire a national society, but would accept any practical means they presented of making it so.

Let thinking physicians who have a national pride consider this matter conscientiously and see if there is not "a still, small voice" within them which says: Go, lend your aid in correcting the defects, in strengthening the weak points, and in placing the American Medical Association still in the ascendency.—*New Albany Medical Herald.*

Diphtheritic Paralysis.—Dr. W. Rozenzweig, in *Can. Practitioner*, reports four cases of paralysis of the soft palate after diphtheria, occurring in children of from 6 to 12 years old, in which a rapid cure was effected by the hypodermic use of strychnine. The doses were from 2 to 4½ ♏ of a 1 per cent. solution, and were injected into the neck. In one case remarkable improvement was produced by the first injection, and in another a complete cure was obtained by three daily injections. In none of them was treatment required beyond a week.

Glycerine.—Dr. Fiodoroff (*Rev. de Thérap.*) uses glycerine in place of iodoform in dressing wounds and tabulates the reasons for his preference as follows: 1. Glycerine produces in external application no disagreeable secondary effects, whether local or general. 2. In suppurating wounds, it diminishes the suppuration, cleanses the granulations, prevents the morbid processes and accelerates the formation of the cicatrix. 3. It acts like a protective layer in cases where mucous membranes have been destroyed. 4. The walls of purulent cavities, under the influence of glycerine, are rapidly altered, healthy granulations making their appearance.

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All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1271, Philadelphia, Pa.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, MAY 28, 1892.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

Attention is directed to the proceedings of this organization on another page of this issue of THE JOURNAL, in which will be found a paper by DR. SOLOMON SOLIS-COHEN, and after the paper, a series of resolutions which were adopted condemning the action of this JOURNAL for admitting certain advertisements of proprietary medicines in its pages.

To all questions there are two sides, and it seems that the reasons for the course which THE JOURNAL has pursued in this matter should be set before the members of the Association.

The ideal in medical journalism has not, and never will be, attained, and it is well that this is so, for then the ambitious journalist would in a great measure cease his labors.

Not infrequently a physician is seized with an ambition to show his fellows just what a medical journal should be and what it should do, and one of the first propositions in his mind is a publication that will be absolutely clean and free from all repugnant advertisements, and, in his estimation, all advertisements are repugnant.

A theory is adopted that an announcement to the medical profession of a medical journal without advertisements will cause hundreds and thousands of names to be sent in as subscribers. The theory is excellent, the ideal is on a high plane; but, unfortunately, the hundreds of expected names do not come in, but instead, the printer's monthly statement is singularly prompt, and if not at once paid, a dun quickly follows, saying, paper bill is due, and printers must have their wages every week, to say nothing of rent, taxes, etc.

The luxury of furnishing copy and seeing a clean publication is highly enjoyed. English adjectives are not sufficiently strong to do justice to the publication; but the vexatious counter-irritation produced by the aforesaid bills fairly blisters the ideal journal, the monthly application soon becomes monotonous, and a running sore is established. The ambitious editor loses patience with all other members of his profession for not flocking to his relief, and as they don't flock, he is apt to indulge in adjectives and resolutions of condemnation. There is no hazard in saying, there is not an editor in this country who would not greatly prefer the management of a journal without advertisements than one with them. In the founding of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the trustees appointed by that body would have much preferred to start THE JOURNAL without advertisements than with them; but the means at their disposal were not only small, but very limited, so that the question presented to them was not of an exclusion of advertisements, but one of founding a journal that would have sufficient life-giving properties to exist after its establishment.

The Association created the Board of Trustees to act. THE JOURNAL was started with advertisements because it could not be started without them. There was neither a rich firm nor wealthy corporation behind the venture. Like all starts of this kind, THE JOURNAL was many a time in a tottery condition; but rigid economy enabled it to withstand the vicissitudes of its early years, and even at this period of THE JOURNAL'S life, its strength is dependent in no slight degree upon its advertising patronage.

In the past some advertising orders have been accepted by THE JOURNAL management which should have been declined, but a desire to strengthen the reading pages was the motive.

The line to be drawn by the publisher must always be guided by his own judgment, and a maturity of knowledge in this direction comes only with an experience of years, and may justly be classed with the skill of an expert in a professional specialty.

For the growing use of such preparations several reasons may be assigned. Practitioners in the country and smaller communities do not have at their disposal the extensive pharmaceutical resources of their brethren in the larger cities, and to men so situated, compressed tablets, and articles of like description, have proven a great boon. The convenience of ready-made preparations once appreciated, the tendency of these gentlemen to lessen their already arduous labors by the further use of such preparations can be readily appreciated. They can, by their use, present their patrons with much more elegant specimens of pharmaceutical work than they can possibly produce from the crude and limited materials to be found in their saddle-bags. Probably these factors of convenience in dispensing and elegance in preparation have contributed more than all else to the use of these much condemned proprietary preparations. Be that as it may, there certainly does exist on the part of the profession at large a widespread demand for just these things.

That it is not scientific to use as remedies preparations whose composition is known but in part is certainly true, and that it is absolutely unjustifiable for any physician to use a preparation whose composition is entirely unknown is likewise true. Just what advertisements should be excluded from appearing in this particular publication is, of course, a matter of individual judgment, in which probably no two men would agree exactly.

Exclude all advertisements of proprietary medicines, says the Philadelphia County Medical Society.

To this we will not object if — the Philadelphia County Medical Society will donate to THE JOURNAL an equivalent sum of money, and furnish a guarantee that this will be continued for a long term of years; but even that could not well be afforded by THE JOURNAL, for the advertisements continuously furnish the members of the American Medical Association with information which many want, and which they could not otherwise obtain unless by taking some other journal.

Furthermore, the art of pharmacy has kept fully abreast of the advances made in other departments of medicine. To such a laudable extent has the work of the pharmacists progressed, that the American Medical Association, two years ago, incorporated pharmacy with materia medica, and made of it a Section of the Association.

The manufacturers of proprietary preparations should be required to make public the ingredients of such preparations. The method of manufacture and the skill used in preparation is their own property, and physicians need not have a practical knowledge of these methods in order to make an intelligent use of such remedies. A knowledge of the methods used for extracting quinine from cinchona bark is not needed by physicians any more than a knowledge of the method used in the manufacture of champagne before drinking, or of the baking a pudding before eating.

Suppose the Philadelphia medical journals would all unite and throw out their advertising patronage, and at the same time double their subscription rate; how long would it take for the physicians of Philadelphia to say to their home journals: Erase our names; we can get an equally good, but no better journal, plus the advertising pages, published in New York for one-half the price you demand. We like to patronize home talent, but don't like to be robbed to pay for it. In that spirit and expression the Philadelphia physician would be but the counterpart of nine out of every ten the country over, and it is the subscriptions of the nine that sustain the journals.

As rapidly as contracts expired during the past year, undesirable patrons of the advertising pages have been eliminated, and offers of orders during that time amounting to more than $1,800 have been rejected because of their character. This work of elimination might, perhaps, have been carried further, but we can say without hesitation that the pages of THE JOURNAL are reasonably free from objectionable advertising matter, and that which is published represents to the Association for the current year a sum exceeding $12,000.

This amount is named, and easily verified, so that the Philadelphia County Medical Society may know approximately the sum annually needed to make good the losses from this source, and the cost of the luxury they have resolved upon.

One other point. The advertising pages of this journal are completely divorced from the reading matter. No "reading notices" appear in its pages. All matter which has any appearance of an advertising character about it is carefully excluded from its reading matter. The advertisements are understood to be paid material, *ex parte* statements, and to be taken for what they are worth, just exactly as advertisements are everywhere.

In this connection, it is instructive to look at the advertising pages of the *British Medical Journal*, truly our sister, as it is published, like this journal, under the auspices of a great national medical association. Among the advertisements which appear in the last number which has reached us we notice "Bynin," "Bromidia," "Bovinine," "Cocatina," "Pepsalia," "Flitwick," etc.

MONUMENTS.

The erection of these structures is characteristic of the people of all times who lay any claim to recognition as belonging to the civilized nations of the earth.

Monuments commemorate the name, life, acts and significant attainments of individuals and of events. The motive which incites to the building of these structures is nearly always praise-worthy, as it indicates an abnegation of self in the contribution of a token of gratitude, in order to commemorate the purpose that is to be kept alive in enduring granite and bronze, for the benefit of succeeding generations.

A few years ago a good spirit put it in the hearts of some members of the medical profession to raise funds to be expended in the erection of a monument in memory of the life of our Nation's first great physician, DR. BENJAMIN RUSH, and annually this subject has been brought before the members of the American Medical Association and contributions solicited. Every year witnesses a little aggregation to the sum originally donated, but it is very desirable that the whole amount be raised at as early a period as possible in order that the people of the present generation may enjoy the sight and thought of such a structure adorning one of the little parks in our Capitol City.

Within the past few months another similar enterprise has been started for the purpose of creating a fund to be expended in the erection of a monument in memory of DR. SAMUEL D. GROSS, to be likewise placed in Washington. No two individuals can be named who more creditably represent the ideals in medicine and in medical men than DRS. RUSH and GROSS. No two men have exerted a more beneficent influence over their profession. No two physicians ever received a more spontaneous recognition of their great professional worth, from the people of all Nations than DRS. RUSH and GROSS. They were true representatives of the highest type of American physicians. For these reasons an appeal is made for contributions to raise funds to be expended in the erection of a RUSH and a GROSS monument in Washington City.

THE STATE SOCIETIES.

Two years ago when the Association met in Nashville, a resolution was offered which had for its purpose the adoption of such a by-law as might be necessary in order to affect a closer unification of the State Societies with the American Medical Association than now exists. Under the rules this went over for a year before action could be taken. Last year when the subject came up in order, the President was directed to appoint a committee to formulate such a plan as might seem proper and practical. Through an oversight this committee was not appointed, but on account of this informality so important a subject as this should not be allowed to drop out of sight, but may very properly be presented at the ensuing meeting, by DR. N. S. DAVIS, who was the mover of the motion to appoint the Committee.

It is exceedingly important that the State Societies should sustain a close and practical relationship with the American Medical Association, by becoming branches of the Central organization. This would be highly beneficial to the State Societies, which should in turn secure the organization of a Society in every county, which would stimulate to good work and do very much in the way of elevating professional standards all over the country. Such local organizations would smooth personal asperities, and it would be soon seen that there is a greater community of interest in the ties that bind us together in a common profession than is generally supposed. The County Societies being all alive and holding monthly meetings would stimulate a universal interest in the State Societies. A membership in a local County Society should also mean a membership in the State Society. The papers and discussions in these local Societies should find their way into print in the local medical journals. This would be a grand good thing for our literature, as it would at once interest every member in the local journal that publishes their proceedings. The universal taking of local journals would do much in the way of eradicating trade publications which subsist wholly on their advertising patronage, and are only debasing and demoralizing in their influence.

In the organization of the State Societies the presidents should be ex-officio vice-presidents of The American Medical Association, and the secretaries and treasurers hold similar relations. These officers having the names of members and the machinery of the State societies in their hands could take the necessary steps to bring every member into actual permanent relationship with the American Medical Association.

This would place the Journal of the Association immediately in the hands of not less than twenty thousand practitioners, and which would very speedily be increased to double, treble and quadruple that large number, and provide for the issue of a publication with the strength of a Hercules in power.

To bring this about, steps should be taken at this meeting to invite all affiliated and National specialty societies to become branches of the American Medical Association on some such simple basis as that above indicated.

URIC ACID DIATHESIS IN CHILDREN.

DR. SUTHERLAND contributes a short but suggestive paper upon this subject in a recent number of the *British Medical Journal.*

Under the heading "Symptoms Due to the Presence of Uric Acid in the System" he says:

> "The subjects of the diathesis are often easily recognized. They have keen precocious minds, and small restless bodies; they are excitable, nervous, bright and amusing at one time, and greatly depressed at another; they do not readily fall asleep at night, often talk in their sleep, and have a habit of awaking in the very early morning; and they are dainty feeders, with a taste for everything that is bad from a nutritious point of view. The children are often described by their parents as being very subject to colds, and a chill in some form or another is the usual precurser of an acute attack. Along with this, and acting possibly as the cause, is a tendency to profuse sweating on moderate heat or exertion. Cold hands and feet are very frequently complained of—a symptom which Dr. Haig ascribes to uric acid in the blood, and which, he suggests, may be found in a more advanced condition as the local asphyxia of Raynaud's disease. During the course of the affection acute attacks occur, which are recurrent in type and usually of short duration, especially if the child is kept in bed. The pharynx is often relaxed and irritable, causing a loud barking cough, most marked when the child goes to bed, and which may be accompanied by some bronchial inflammation. The tonsils and adenoid tissue of the naso-pharynx are liable to acute attacks, which lead to chronic thickening and enlargement. Frontal headaches and symptoms of intestinal catarrh, with a furred tongue and foul breath are common. As regards the heart a slight irregularity is occasionally found, and the pulse is often small, weak, and irregular. The liver and spleen may be enlarged. In some cases abdominal pain is the only complaint, and this may sometimes be found to be localized in the right iliac fossa."

Among the symptoms connected with the excretion of uric acid, **Dr. Sutherland** mentions prominently renal colic, which with Dr. **Goodhart**, he correctly believes to be more common in children than is generally supposed. He also calls attention to incontinence of urine and vesical irritation.

Dr. Sutherland's description of the symptomatology of this disorder is so graphic that we have thought best to repeat it in his own words. But as the description is read, one instinctively feels that the analysis has not been sufficiently close. The subject is one which as yet is surrounded by much doubt, and nearly everything which has been written upon it, reflects the doubts and uncertainties of the writers. **Dr. Sutherland** makes no reference to age, although the cases which he reports range from 4 to 11 years.

Much of the first part of his description is very suggestive of the earlier symptoms of incipient rickets, while the latter part recalls cases of stercoræmia.

Broadly speaking, the conditions he mentions are evidences of perverted metabolic processes, long continued, and in which the question of infection can hardly be supposed to enter at all.

It would seem that all possible factors in the production of perverted metabolism of this type might be comprised under the following heads:

1. Heredity—involving essential deficiency or misdirection of the elaborative, assimilative, retrograde or excretory processes.
2. Deficiency of food supply in quantity or kind—producing general starvation or such special forms of starvation as rickets.
3. Auto-intoxication, produced either by poisons elaborated in the system, or by poisons absorbed from the intestinal tract.

The nutritional processes of children under two years of age are so essentially different from these processes after that age, that it would seem necessary to always take this factor into consideration.

The foregoing is offered as a preliminary plan for the study of the nutritional disorders of infancy and childhood, which are exceedingly important, but as yet very much in the dark.

THE DETROIT MEETING.

It is with much regret that we are obliged to announce that outside the boundaries of the Central and Michigan Traffic Associations, we have not been able to secure a better passenger rate than a fare and a third for the round trip to the Detroit meeting. In purchasing tickets delegates should obtain a certificate from the railroad agent. This certificate must then be countersigned by the Secretary of the Association at Detroit, which enables the holder to purchase a return ticket at the reduced rate.

Delegates from points west of Buffalo and Pittsburgh, and east of the Mississippi river, north of the Ohio river and south of the Great Lakes, will be able to obtain the single fare rate from their homes to Detroit and return, on dates during the week of the meeting.

In obtaining this concession from the Central and Michigan Traffic Associations, we had the practical aid of the general passenger agent of the Michigan Central Railroad.

And on our assurance of a large delegation from this and other points west and south of Chicago, he has placed at our disposal a large special train of Pullman sleepers, which will leave here Monday evening, June 6, at 9 P.M., arriving in Detroit early Tuesday morning.

The arrangements are ample for the handsome accomodation of delegates, even should the number from this point alone reach more than a thousand. All other things being equal, it is best to go together in a body. In any case it will be the correct thing to do to send your name to Mr. L. D. **Heusner**, 67 Clark street, Chicago, requesting him to reserve for you a berth or section, as you may desire, on this or any other Michigan Central train that may leave here on or after Monday morning.

All railroads in this Central Traffic district above outlined, give the uniform single fare round trip rate. Where a number expect to go from one point, as from St. Louis, Louisville, Cincinnati, Pittsburg and Cleveland, it will be well for some one to arrange with the Passenger Agents at those points for special cars and trains. Nashville, Chattanooga, Louisville and other points in that direction should converge to Cincinnati, where they will meet a large delegation of members and make up one, or even more train loads. The same may be said of other points.

Detroit is this year our Mecca, and to it every loyal member of the American Medical Association should turn his face, taking with him as many new men as possible.

Detroit is a grand place for the wives of delegates to go to. The city itself is surpassingly beautiful. The river affords excellent boating and fishing, and the drives are at their best.

We have only to hint at the hospitable provisions made for their entertainment by the ladies of Detroit and Michigan. It is sumptuous. We have our own opinion of the delegate that don't take his wife to such a meeting when the railroad rate is a single fare for the round trip, and the rate goes alike for the doctor's helpmate with himself.

The Rush Monument.—Soon after the adjournment of the Nashville meeting of the Association, the chairman of the Committee of Exhibitors, William J. Evans, Esq., of New York, informed the undersigned of the unanimous vote of the exhibitors to contribute whatever balance there might be over all expenditures to the Rush Monument Fund, and accordingly Dr. J. Berrien Lindsley, of Nashville, who, by appointment of the local Committee of Arrangements, was charged with the entire management of the exhibits, has paid to Dr. DeWitt C. Patterson, of Washington, the Treasurer of the Rush Monument Committee, the sum of *three hundred dollars* as the contribution of the exhibitors to that Fund.

The Rush Monument Committee desires to make this public acknowledgement of the generous action of the exhibitors at the Nashville meeting of the Association, and to express the hope that their splendid example may induce others to do likewise.

ALBERT L. GIHON, M.D.,
Chairman R. M. C.
GEORGE H. ROHE, M.D.,
Secretary.

MORTALITY FROM INFLUENZA.—The first quarter of the year 1892, in New York State, showed an abnormally high death-roll from local diseases. The Secretary of the State Board of Health, for that State, makes an estimate that not less than 10,000 persons died there, in January, February and March, from epidemic influenza or from diseases predicable upon that epidemic.

THE MICHIGAN STATE MEDICAL SOCIETY, at its late meeting in Flint, unanimously adopted resolutions urging Congress to pass the Bill creating a Cabinet Officer of Public Health.

SECTION ON SURGERY AND ANATOMY—PROGRAM.

Section meets in Schwankovsky's Music Hall, Woodward Avenue, corner John R Street.

Officers of Section, J. Mc F. Gaston, Atlanta, Ga., Chairman; F. W. Mann, Detroit, Mich., Secretary; Jno. B. Hamilton, Chicago, Ill., Orator.

ORDER OF BUSINESS.

FIRST DAY, TUESDAY, JUNE 7, AFTERNOON SESSION—3 O'CLOCK.

Call to Order.
Report of Committees.
Reading of Papers and Discussion.
Appointment of Nominating Committee.
Miscellaneous Business.

SECOND DAY, WEDNESDAY, JUNE 8, AFTERNOON SESSION—3 O'CLOCK.

Call to Order.
Report of Nominating Committee.
Election of Officers (time fixed by the By-laws).
Reading of Papers and Discussion.
Miscellaneous Business.

FOURTH DAY, FRIDAY, JUNE 10, AFTERNOON SESSION—3 O'CLOCK.

Call to Order.
Report of Committees.
Reading of Papers and Discussion.
Adjournment.

TUESDAY, JUNE 7—AFTERNOON SESSION, 3 O'CLOCK.

Surgery of the Liver, Etc.

1. Address of the Chairman. Surgery of the Gall-Bladder and Ducts, J. McFadden Gaston, Atlanta, Ga.
2. Obstruction of the Cystic Duct, with a Case, W. H. Myers, Fort Wayne, Ind.
3. Peritonitis from Gall-Stones, W. E. B. Davis, Rome, Ga.
4. Gunshot Wound of the Liver and Stomach. Laparotomy. Recovery, James T. Jelks, Hot Springs, Ark.

Discussion opened by A. Vander Veer, Albany, N. Y.; J. F. W. Ross, Toronto.

5. Eight Cases of Œsophageal Stricture, D. S. Campbell, Detroit.

WEDNESDAY, JUNE 8—MORNING SESSION, 9:30 O'CLOCK.

Intestinal Surgery.

6. Intestinal Obstruction, Dudley P. Allen, Cleveland, O.
7. Intestinal Obstruction and its Treatment, H. H. Mudd, St. Louis, Mo.
8. A Comparative Test of Anastomotic Devices, John D. S. Davis, Birmingham, Ala.
9. A Clinical Contribution to the Operative Treatment of Acute Intestinal Obstruction, Nicholas Senn, Chicago, Ill.

Discussion opened by S. McMurtry, Louisville.

WEDNESDAY, JUNE 8.—AFTERNOON SESSION, 3 O'CLOCK.

Abdominal Surgery.

10. The Comparative Merits of Inguinal and Rectal Colotomy, J. M. Mathews, Louisville, Ky.
11. Intestinal Lesions in Abdominal Surgery, Joseph Price, Philadelphia, Pa.
12. On the Treatment of Injuries of the Abdomen not requiring Surgical Operations, J. Schneck, Mt. Carmel, Ill.
13. Emergency Work in Abdominal Surgery, Mordecai Price, Philadelphia, Pa.
14. The Present Status of the Surgery of the Vermiform Appendix, J. A. Wyeth, New York City.
15. Herniæ; Operable and Inoperable, T. H. Manley, New York City.
16. A Few Points in the Management of Strangulated Hernia, W. B. DeGarmo, New York City.
17. The Management of Gangrenous Hernia. Report of a Case, J. Ransohoff, Cincinnati.
18. Illustrations of Methods of Operating in Hernia, H. O. Marcy, Boston, Mass.

THURSDAY, JUNE 9—MORNING SESSION, 9:30 O'CLOCK.

Miscellaneous.

19. The Cremasteric Reflex in Varicocele, T. A. McGraw, Detroit, Mich.
20. Experimental Researches in the Implantation of the Ureters into the Rectum, R. Harvey Reed, Mansfield, Ohio.
21. Visceral Phlebotomy, George Harley, London, Eng.
22. Advances in Aseptic Surgery, F. J. Thornbury, Buffalo, New York.

THURSDAY, JUNE 9—AFTERNOON SESSION, 2:30 O'CLOCK.

Miscellaneous.

23. Operative Procedures at the Base of the Brain, Ernest Laplace, Philadelphia, Pa.
24. Gunshot Wounds of the Cerebrum, C. E. Ruth, Muscatine, Ia.
25. Air in the Veins, Edward Martin, Philadelphia, Pa.
26. Total Excision of the Lower Jaw for Malignant Disease, C. B. Nancrede, Ann Arbor, Mich.
27. Cosmetic Surgery of the Nose, J. B. Roberts, Philadelphia, Pa.
28. Notes on the Diagnosis and Treatment of Lupus, W. T. Corlett, Cleveland, O.
29. The Treatment of Infected Wounds of the Extremities by Continuous Immersion, F. Jenner Hodges, Anderson, Ind.

FRIDAY, JUNE 10—MORNING SESSION, 9:30 O'CLOCK.

30. Neurectomy of the Great Sciatic Nerve. Removal Astragalus for Talipes Equinovarus. Removal of Saliva

Calculus. Amputation of Scrotum and Prepuce for Abnormal Condition of the Skin, R. Merrill Ricketts, Cincinnati, O.

31. Tracheotomy in Reference to Foreign Bodies in the Air Passages, W. F. Westmoreland, Atlanta, Ga.

32. Forced Respiration. Fell Method of Face Mask and Tracheotomy in Diphtheria. Report of Case, Geo. E. Fell, Buffalo, N. Y.

Friday, June 10—Afternoon Session, 2:30 o'clock.

Surgery of Extremities, Genito-urinary, etc.

33. The Modern Treatment of Gonorrhœa and its Complications, J. J. Darby, Columbia, Ala.

34. A Rational Treatment of Enlarged Prostate, founded upon its Pathology. Ernest Laplace, Philadelphia, Pa.

35. Methods of Examination of Diseases of the Joints, W. R. Townsend, New York City.

36. Treatment of Compound Fractures, W. H. Myers, Fort Wayne, Ind.

37. Diseases of the Knee and Hip Joints, J. C. LeGrand, Anniston, Ala.

38. Amputations in the Light of Mechanical Science versus Prothetical Science. Illustrated with Artificial Limbs, S. L. McCurdy, Dennison, O.

39. Antiseptic Physiological Surgery, John C. Link, Terre Haute, Ind.

40. The Radical Cure of Hydrocele, by a New Method, H. O. Walker, Detroit, Mich.

DOMESTIC CORRESPONDENCE.

A Case of Perineal Section—Foreign Body Found in the Urethra.

To the Editor of the Journal of the American Medical Association:

The following case may present some unusual points of interest:

I was consulted at different times by T. S., aged 55 years, a practitioner of medicine, *not* of the regular school of practice, in regard to a bladder trouble. He had frequent urination, and a constant discharge of pus. He stated that he had been shot by a pistol-ball through the scrotum during the late war. He said he thought he had stone in the bladder, or that the pistol-ball had lodged in or near the bladder. That he could not stand horse-back riding; had frequent perineal abscesses; was confined to his bed for days at a time occasionally. He was in bad health, and his general appearance indicated a urinary trouble. His urine had a horribly ammoniacal odor. I advised perineal section, and he consented. On March 17, 1892, I. being ably assisted by two members of the regular school of practice, performed perineal section. He was given chloroform at first, and the anæsthesia was continued with ether. The median line had been the seat of former inflammations, and the raphe was drawn to the right. On making an incision from the base of the scrotum to within half an inch from the anus, several blood vessels were severed. The fascia on the right side of the urethra was firmly adherent to the urethra, and the tissues were glued together from the effects of former inflammations. A whalebone filiform bougie had been introduced into the bladder, and a Gouby tunneled catheter pushed over it to a point in front of the membranous portion of the urethra, where it was arrested by some obstruction.

Just in front of the membranous portion of the urethra, and running back under it, was what appeared to be a sinus, [illegible]rom which the blood flowed freely. This could be arrested [illegible] pressure, or closing the opening of the sinus with a [illegible]dget of absorbent cotton; but as the pressure was [illegible]moved, the blood would spout out, completely obscuring [illegible] parts. On close examination, there was *found to be a* hard body in the urethra just in front of the membranous portion. An incision, longitudinally, was made into the urethra, and a metallic substance which I thought might be the edge of a flattened bullet appeared to view.

My able assistant, Dr. T., seized it with a pair of small forceps and drew out a hairpin, or a wire bent in the shape of a hairpin broken off. It was about two inches long, and one of the ends had a short crook on it. The rounded end of the hairpin was pointed toward the bladder, and was just in front of the membranous portion.

On account of the bleeding from the above mentioned sinus, it was found impracticable to divide the membranous portion longitudinally, as had been intended, and rapid dilatation, according to the plan of S. D. Gross, was carried on, beginning with a small black rubber bougie, and using larger and larger instruments until a No. 17 English scale steel sound passed readily into the bladder. The wound was skilfully dressed by Dr. T.

We left the wound in the urethra in such a condition that it would drain freely if the urine should escape through it.

The patient made a rapid recovery. Urine escaped partially through the wound in the perineum up to the eighth day, when it ceased to escape through the wound and was discharged naturally and easily.

On the ninth day I examined the urethra with sounds. The stricture in the membranous portion had recontracted some, but a No. 13 English scale steel sound passed through it tolerably easy.

The operation had greatly benefited the patient. He only had to void the urine twice in twenty-four hours, and the ammoniacal odor had disappeared. The patient made a partial confession, stating that he had introduced the hairpin with forceps to dilate a stricture when he could not urinate some years ago. He had suffered untold agony for years. I kept the hairpin, and also a pair of forceps which he had used, as he said, to grasp stone, but which I think he had tried to extract the hairpin with. The forceps were made by a blacksmith. The patient had greatly damaged the urethra from meatus to bladder with forceps, bougies, catheters, etc. I advised him to cease further meddlesome interference with the urethra, and to put himself under the care of some competent surgeon, and rely on his instructions alone. W. J. Welsh, M.D.

SELECTIONS.

Default of Cilary Action and Disease.—The default of ciliary action in the respiratory tract must have a most important bearing on disease, especially during the presence of fogs, whether they be moist or dry. Strong men with large powerfully acting chests, who move about in fog and dust, suffer considerably from loose cough, but are not long troubled by it. They cough up large quantities of secretion, which is as black as if soot had been mixed with it, and which is, in fact, bronchial mucus loaded with soot. The fine particles of carbon in the air have been carried into the minute bronchial ramifications. and have been brought back into the larger bronchi from tubes, in which they would easily produce dangerous obstruction but for the active motion of the ciliary fibres. This motion is going on steadily night and day, and is relieved by frequent cough, through which small quantities of mucus are expelled. During the night when the cough is quiet the mucus carried to the upper portion of the bronchial tract accumulates there, and gives rise, on awakening, to a series of coughs, during which free quantities of dark mucus are expectorated, and all accumulation is thrown off. It is a good sign of healthy lungs when a free expectoration of dark sputum is followed by a small quantity of white clear mucus. The difference indicates that the ciliary vitality is sound, and that the lung remains, on each side, a good filter.

As a general fact the ciliary vitality runs with age: in the young it is most active; in the middle-aged it continues good; in old age it begins to decline; and in the very aged it probably ceases altogether. In the chronic bronchitis of the aged the absence of ciliary motion must add considerably to the danger of inhaling atmospheres charged with particles of smoke and dust. The knowledge of this very simple and elementary physiological fact is full of meaning of a practical kind. People as they get on in life are apt to become of indolent habit. They like the luxury of the easy-chair and chimney corner; they dislike to face the weather. The old scholar gets into his library, and there in the midst of his books, which are the worst accumulators of dust in the world, he luxuriates in a very ocean of fine particles which he does not recognize. If a ray of sunlight strikes across his room he is startled at seeing in what a cloud he is immersed, or if he takes down a few books all at once for a search, he is surprised to observe how he has blackened his hands, and what a quantity of black sooty matter he coughs up afterwards. The old lady in her snug drawing-room, with its cushions and stuffed chairs and tasty bric-a-brac, sinks into similar luxurious ease, and observes when she goes in for putting things a little right the same signs of dirty air. These signs are good guides for the management of old bronchial passages, with their lifeless cilla. They tell the aged that when they are obliged to stay within doors in dull and treacherous seasons the air inside may be as injurious as the air without. They declare as clearly as if they were speaking phenomena that the air of the apartment is dangerously full of dust, and that the ciliary brushes are not in sufficient force to clear the passages lying between the air and the blood. Hence the moral. Have the air of the room cleansed, and, if it be possible, go out into fresh air to give the lungs a good chance of purification. In my practice I am often consulted by men of business, or of letters, who, having passed the meridian of life, still pursue, and would very judiciously pursue, their usual avocations, except that in their offices or libraries the air is bad from the presence of dust. To these, suffering from bronchial cough with dark sputum, I always prescribe a day or two of country air as the lung-purifier of the best sort. In mild, warm weather the sea air may be the best for such persons, but in less promising weather country air, in a pure locality, is just as good. Nor is it necessary to go far from a town. To the Londoner the air of Sydenham or Chislehurst is excellent; and that of Hampstead Heath is good beyond dispute.—*The Asclepiad.*

There are a large number of causes of disease for which society is responsible and from which individuals suffer. Only National, State and municipal authorities have power to rectify these conditions. Is there any more legitimate office of government than the protection of public health? We are tempted here to quote the Declaration of Independence and the Constitution of the United States. To secure the right to *life*, firstly, Governments were instituted—the right to life to ourselves and our posterity. But what is the comparative public expenditure for sanitary purposes? The best ability is permanently employed to adjudicate rights to property; who is retained to protect rights to health? Numerous legislative and executive departments are formed for various purposes; where are the departments of hygiene? We beg our readers to ask people if they are really solicitous for the public health? And let it be seen and known of all men that the profession is not indifferent on this subject.—*Massachusetts Med. Journal.*

Treatment of Metritis of the Os by Interstitial Injections of Creasote. Dr. Touvendit (*Gazette de Gynécologie*).—This troublesome affection of the os, which varies in intensity from catarrh to severe inflammation with ectropion, can be well treated by the surface application of creasote in its slighter forms, and better still by its submucous injection in the graver. The author uses a mixture of equal parts of creasote, glycerine and alcohol. The vagina is carefully mopped or syringed out and a cylindrical speculum passed, and then, with the aid of a Pravaz syringe with a very long barrel, a few drops of the liquid are inserted at two or three points about ¼ of an inch deep. The rapidity of the absorption is shown by the fact that the patient can taste the creasote, usually, within a few minutes of its injection. There is no pain, only a feeling of warmth locally, and the operation can be repeated in three or four days, and usually with excellent results.

Physiology in the Public Schools.—In the report of the Massachusetts State Board of Education recently issued, Mr. G. H. Martin comments upon the teaching of physiology and hygiene under the law of 1885. This law had special reference to the effect of stimulants and narcotics upon the human system, and the instruction was expected by some of the promoters of the law to inculcate in the youthful mind an abhorrence of intoxicating liquors. Mr. Martin arrives, among others, at the following conclusions: The outcome in accurate knowledge resulting from much of the work done is meagre, and out of proportion to the time spent upon it. Many false impressions are left in the minds of the students; physiological details are not suited to young children. However defective the system of instruction may be, the sentiment of the schools is sound—the conviction that alcohol and tobacco are bad things to use seems universal. Where exaggerated notions of the effects of stimulants have been acquired, there is danger of a reaction of sentiment in the light of after-knowledge. Among the suggestions which he makes are, that teachers prepare this subject with more care and see that their statements are true, and by frequent tests ascertain that their teaching is properly comprehended, and that the use of text-books should be limited to the older pupils. The moral and social effects of the abuse of intoxicants should be made more prominent, and abstinence be advised for other reasons than such as concern only the body.—*Boston Med. and Surg. Journal.*

MISCELLANY.

NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

Officers.—President, J. N. McCormack, Bowling Green, Ky.; Secretary, Dr. C. O. Probst, Columbus, Ohio; Treasurer, Dr. Henry B. Baker, Lansing, Mich.

The Eighth Annual Meeting of the Conference of State Boards of Health will be held in Lansing, Michigan, June 6, 1892.

The meeting will convene at 10:00 A.M., in the Senate Chamber of the State Capitol.

Governor Winans will informally receive the members of the Conference in the Executive Rooms in the State Capitol during the day or evening of June 6. The Local Committee has expressed the hope that the time of the members of the Conference will permit of their visiting the three other State Institutions located at Lansing.

Headquarters will be at the Hotel Downey, where special rates have been secured.

THE FOLLOWING QUESTIONS FOR THE CONSIDERATION OF THE CONFERENCE HAVE BEEN RECEIVED BY THE SECRETARY.

Proposed by the State Board of Health of Connecticut.—*a.* What is the most practicable way of providing a hospital for contagious diseases for a town or community of a population of 5,000, the same to be always ready for the reception of patients? *b.* What will be the average cost of maintaining it, per annum; the probable number of patients it would be called upon to receive being regarded in the estimate? Discussion opened by Dr. L. F. Salomon, of New Orleans, La., and Dr. Louis Balch, Albany, N. Y.

Proposed by the State Board of Health of Indiana.—How strict should the quarantine be in cases of diphtheria and scarlet fever? Discussion opened by Dr. Thos. J. Dills, Ft. Wayne, Ind., and a member of the Iowa Board of Health.

The Michigan Plan of Sanitary Conventions.—By Prof. Delos Fall, Albion, Michigan.

Proposed by the State Board of Health of Louisana.—*a.* What should be the relations of State and County Boards of Health? *b.* What should be the relation of State Boards of Health to National Authorities? *c.* What should be the relation of State Boards of Health to the State? Discussion opened by Dr. C. P. Wilkinson, New Orleans, La.

Proposed by the State Board of Health of Pennsylvania.—In view of the increasing frequency of communication between the Republic of Mexico and the United States, and of the constant prevalence of typhus fever in the former country, is there such probability of the introduction of that disease into the United States as to make it important for Health Officers along the southern frontier to use especial vigilance on that account. Discussion opened by Dr. Robert Rutherford, Houston, Tex., and Dr. L. F. Salomon, New Orleans, La.

Proposed by the State Board of Health of Ohio.—What measures can be enforced to prevent the spread of infectious diseases in rural districts. Discussion opened by Dr. J. T. Reeve, Appleton, Wis., and Dr. J. Berrien Lindsley, Nashville, Tenn.

The Relation of the Laboratory of Hygiene to the Work of the State Board of Health.—By Prof. Victor C. Vaughan, Director of the State Laboratory of Hygiene, Ann Arbor, Mich.

Proposed by the State Board of Health of Kentucky.—Should State Boards of Health be charged with the administration of medical practice laws? Discussion opened by Dr. Henry B. Baker, Lansing, Mich., and Dr. Jerome Cochran, Montgomery, Ala.

Proposed by the Provincial Board of Health of Ontario.—*a.* Has intra-State, inter-State, and International action to prevent the sewage pollution of streams become a necessity? *b.* If so, what steps are practicable for bringing about conjoint action? *c.* What practical methods are available for preventing such pollution? Discussion opened by Dr. Benjamin Lee, Philadelphia, Pa., and Dr. P. H. Bryce, Toronto, Ont.

The Public Health Work in Michigan.—By Dr. Henry B. Baker, Secretary of State Board of Health, Lansing, Mich.

Proposed by the State Board of Health of Tennessee.—The practical working of inter-State notification. Discussion opened by Dr. P. H. Bryce, Toronto, Ont., and Dr. J. Berrien Lindsley, Nashville, Tenn.

Proposed by the State Board of Health of Vermont.—The part played in the spread of tuberculosis by the flesh and milk of tuberculous cattle. Discussion opened by Dr. C. H. Fischer, Providence, R. I., and Dr. Victor C. Vaughan, Ann Arbor, Mich.

Proposed by the State Board of Health of Pennsylvania.—Is the disinfection of baggage essential to effective quarantine? Discussion opened by Dr. C. H. Hewitt, Red Wing, Minn., and Dr. S. R. Olliphant, New Orleans, La.

UNFINISHED BUSINESS.—Report of the Committee to formulate a plan for the creation and organization of County and other Local Boards of Health. Dr. Henry B. Baker, Michigan; Dr. C. A. Lindsley, Connecticut; Dr. Benjamin Lee, Pennsylvania, Committee.

Report of the Committee to make a Codification of the Health Laws of the different States and Provinces: Dr. A. G. Young, Maine; Dr. H. B. Baker, Michigan; Dr. Wm. Oldbright, Ontario, Committee.

Report of the Committee on the Collective Investigation of Diseases: Dr. C. H. Fisher, Rhode Island, Dr. S. W. Abbott, Massachusetts, Dr. Benjamin Lee, Pennsylvania, Committee.

Report of the Committee on Vital Statistics: Dr. Henry B. Baker, Michigan.

Report of the Committee on the Prevention of Consumption: Dr. P. H. Bryce, Ontario; Dr. L. F. Salomon, Louisiana; Dr. Victor C. Vaughan, Michigan, Dr. Irving A. Watson, New Hampshire; Dr. Henry B. Baker, Michigan, Committee.

Report of the Committee on the Pollution of Streams, and the Formation of Rivers Conservancy Commissions: Dr. L. F. Salomon, Louisiana, Dr. C. A. Lindsley, Connecticut, Dr. C. N. Metcalf, Indiana, Dr. John H. Rauch, Illinois, Dr. Henry P. Walcott, Massachusetts, Committee.

The Conference will adjourn Tuesday afternoon in order that its members may go to the Association meeting at Detroit in the evening. DR. C. O. PROBST, Secretary.

AN ACT TO REGULATE THE PRACTICE OF MIDWIFERY IN THE STATE OF NEW JERSEY.

1. Be it enacted by the Senate and General Assembly of the State of New Jersey. That every person practicing midwifery in any of its branches, shall possess a certificate from the State Board of Medical Examiners as hereinafter provided.

2. And be it enacted, That every person now practicing midwifery in cities of the first and second classes in this State shall, within thirty days after the passing of this act, personally present to the State Board of Medical Examiners an affidavit setting forth the name, nationality, age, authority, location and length of practice, together with a certificate of good moral character from some registered physician, resident of the same district; whereupon the board, on receipt of a fee of one dollar shall issue a certificate, signed by its president and secretary and bearing the seal of the said board, entitling the person named therein to practice midwifery in this State.

3. And be it enacted. That every person hereafter beginning the practice of midwifery in this State, shall appear before the State Board of Medical Examiners and submit to such examinations in midwifery as the board shall require, and if such examination is satisfactory to the examiners, the said board shall, upon the receipt of a fee of five dollars issue a certificate the same as provided in section two of this act.

4. And be it enacted that the person so receiving said certificate shall file the same or a true copy thereof with the clerk of the county in which she resides, and said clerk shall file said certificate or a copy thereof, and enter a memorandum thereof, giving the date of said certificate and the name of the person to whom the same is issued, and the date of said filling, in a book to be provided and kept for that purpose; *and for which registry the said county clerk shall be entitled to demand* and receive from each person registering the sum of twenty-five cents.

5. And be it enacted, That the State Board of Medical Examiners are hereby authorized and empowered to execute the provisions of this act, and shall hold examinations of candidates for certificates in midwifery, at such times and places as may be deemed expedient.

6. And be it enacted, That the State Board of Medical Examiners may refuse licenses to persons guilty of unprofessional or dishonorable conduct, and may revoke licenses for like cause, or for neglect to make proper returns to the various health officers, of births, and the cases of puerperal and other contagious diseases occurring in their practice.

7. And be it enacted, That any person shall be regarded as practicing midwifery within the meaning of this act who shall publicly profess by advertisement, sign, card or otherwise, to be a midwife, or who shall, for a fee, attend to women in child birth, but nothing in this act shall be construed to prohibit gratuitous service in case of emergency, nor to the legally qualified physicians or surgeons of this State.

8. And be it enacted, That any person practicing midwifery in this *State without first complying with the provisions of this act, shall be* guilty of a misdemeanor, and shall be punished by a fine of not less than ten dollars nor more than fifty dollars, or by imprisonment in the county jail for not less than ten nor more than thirty days, or both, in the discretion of the court.

9. And be it enacted, That all acts or parts of acts inconsistent herewith be and the same are hereby repealed, and that this act shall take effect immediately.

Approved March 28, 1892.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 14, 1892, to May 20, 1892.

Major James P Kimball, Surgeon U. S. A., leave of absence granted is extended one month.

First Lieut. Henry A. Shaw, Asst. Surgeon U. S. A., is granted leave of absence for two months, to take effect June 25, 1892, or as soon thereafter as his services can be spared.

Asst. Surgeon William N. Suter, U. S. A., to be Asst. Surgeon with the rank of Captain, May 16, 1892, after five years' service, in accordance with the Act of June 23, 1874.

First Lieut. Theodore F. DeWitt, Asst. Surgeon U. S. A., resigned May 16, 1892.

A board of medical officers, to consist of Lieut.-Col. William H. Forwood, Surgeon; Major Joseph R. Gibson, Surgeon; Capt. Henry S. Turrill, Asst. Surgeon, is appointed to meet at West Point, N. Y., June 1, 1892, or as soon thereafter as practicable, for the physical examination of the cadets of the graduating class at the U. S. Military Academy and such other cadets of the Academy, and candidates for admission thereto, as may be ordered before it.

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending May 21, 1892.

Medical Director P. J. Horwitz (retired), granted six months' leave to go abroad.

Surgeon P. A. Lovering, detached from the U. S. S. "Philadelphia," and granted two months' leave of absence.

P. A. Surgeon R. P. Crandall, detached from the Naval Laboratory, Brooklyn, N. Y., and to the U. S. S. "Philadelphia."

Asst. Surgeon E. S. Bogert, Jr., detached from Coast Survey Str. "Blake," and to the Naval Laboratory, Brooklyn, N. Y.

Asst. Surgeon J. A. Guthrie, detached from Port Royal Station, S. C., and to Coast Survey Str. "Blake."

Surgeon H. C. Eckstein, granted leave of absence for six months.

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American Medical Association

VOL. XVIII. CHICAGO, JUNE 4, 1892. No. 23.

ORIGINAL ARTICLES.

REPORT ON ABDOMINAL AND PELVIC SURGERY.

Report of the Chairman of the Committee on Abdominal and Pelvic Surgery, read before the Kentucky State Medical Society, May 6, 1892.

BY WILLIAM H. WATHEN, M.D.,
OF LOUISVILLE, KY.
Professor of Abdominal Surgery and [illegible] Kentucky School of Medicine; ex-President of the [illegible] Gynecology of the American Medical [illegible] of the Kentucky State Medical Soc[illegible]rican Gynecological Society, of the American Association of Obstetricians and Gynecologists, and of the Southern Surgical and Gynecological Society; Consulting Surgeon to the Louisville City Hospital, etc.

There is probably no department of surgery that has been carried to a greater extreme by enthusiasts and record makers than laparotomy. This fact has become so flagrantly manifest that there is a general protest from the honest, learned and conservative abdominal and pelvic surgeons against the unnecessary and sometimes criminal mutilation of women by ignorant and unscrupulous men.

At the meeting of the American Gynecological Society at Washington, in September, 1891, composed of men who are as learned and successful surgeons as any in the world, there was a determined and nearly universal effort to impress upon the medical profession the wisdom and benefits of conservative gynecology, and the evil of too much needless mutilation in laparotomy. Dr. A. Doleris has fearlessly discussed the subject "Too many Needless Mutilations—not enough Conservative Gynecology," in the July and August numbers of the *Nouv. Arch. d'Obst. et de Gyn.* His extensive gynecological practice affords excellent opportunities for observation, and his conclusions are that eight-tenths of the women upon whom laparotomy or hysterectomy has been done, submitted needlessly to the operation, and that in Paris alone there are four thousand women who have been deprived of their ovaries or uteri without sufficient cause.

While I offer no apology for any one who does these operations where they are not indicated because of ignorance or for the purpose of making a record of a series of successful laparotomies, I am sure the abuse is not so far-reaching in this country.

From an abstract of Doleris' paper in the January (1892) number of the *Amer. Journal of Obstetrics and Diseases of Women and Children*, I quote the following:

> This is an age in which unscrupulous and unreasoning operative boldness, more or less helped out by antisepsis, too often takes the place of true surgical knowledge. Hysterectomy and laparotomy are undertaken apparently for the sole purpose of increasing the physician's list of operations performed; only the immediate result is taken into account, while those who stop to ask whether less radical measures would afford the desired relief are few in number. . . . . .
>
> In the report of hysterectomies the whole truth is unfortunately not always told. One operator has claimed that the patient *obliged* him to operate. After palpation and prolonged internal examination, the diagnosis was still utterly beclouded. He *performed hysterectomy, and removed uterus, tubes and ovaries, all in a perfect condition of health.* Could the patient have forced him to throw her out of the window? . . . . .
>
> Can it be that operations are performed principally that young surgeons may acquire experience and dexterity, and that, if legitimate subjects of operation are wanting, the accommodating operator will perforce content himself with what he can get? . . . . .
>
> Neophytes in gynecology seem to have but one idea—laparotomy, sensational operation, a round dozen of castrations to start off with! Cases suddenly assume a dangerous aspect, and if nothing dangerous can be made of them, at least they necessitate an exploratory incision; but the abdominal wound is rarely closed without the extraction of—something. This is not gynecology, it is merely surgical license. Let the extremists beware! They are playing with edged tools. In the course of time people will no longer be taken in by their affectation of simplicity, their occasional acknowledgment of error—"very deplorable, no doubt"—and their absolute mania for operating. . . . . .
>
> But in the face of threatened danger the honest man can scarcely adopt the principles of *laisser faire*, nor can the real gynecologists, who desire the good of their patients and who wish to be worthy of their profession, hold their peace when they witness the excesses committed in the name of abdominal surgery.

Cases are not wanting in any large city to verify, in a degree, the severity of these criticisms. A lady was referred to me by her consulting physician. Her physician had diagnosticated extra-uterine pregnancy at four and one-half months, and had urged her to allow him to do a laparotomy and remove it. He had dilated the cervix and had introduced a sound into the uterus. This gentleman had successfully operated upon another woman for an extra-uterine pregnancy. The history of the case did not show a symptom of extra-uterine pregnancy, and in an examination a typical intra-uterine pregnancy was at once diagnosticated; the finger could be easily introduced through the dilated internal os, and the presenting head of the child distinctly felt. I could not understand why her doctor suspected extra-uterine pregnancy, but had it not been for the wisdom and conservatism of her consulting physician, an unnecessary and probably fatal laparotomy would have been done.

Some months since a lady consulted a progressive abdominal surgeon, who diagnosticated an ovarian cystoma and recommended an ovariotomy. The woman was delivered of a fully developed child some months later, and the tumor suddenly disappeared. The same gentleman was consulted by another lady and again diagnosticated an ovarian cystoma, and sent her home to return in a few weeks for an operation. Her home physician was consulted and discovered that there was no tumor, but that his patient was five months pregnant. The same physician examined another lady and told her that he had not seen more extensive pelvic adhesions, and that her uterus, ovaries and tubes were firmly bound down, that she could never become pregnant and that a laparotomy must be done and the ovaries and tubes removed. She was not operated upon, but two months later conceived and carried her child to term without an untoward symptom, and is now a happy mother. In another instance he insisted on doing a laparotomy at night because if he delayed until morning it would be too late to save the life of the patient. The consulting surgeon could discover nothing to justify an operation, and in the morning there was not a symptom indicating the necessity for a laparotomy.

Another physician had decided to open the abdomen for appendicitis, but a consulting physician examined the case and diagnosticated intestinal perforation from typhoid fever, with patient in collapse; she died within three hours.

It is needless to multiply cases to show the evils that may result from a mania to report a long series of abdominal sections.

I have several times been called to cases of malignant disease where the surgeon had decided to do a vaginal hysterectomy, but wanted my approval before operating. The disease had extended to the uterine adnexa, and the uterus and other pelvic structures were so matted together that mobility was destroyed, and the uterus could not have been removed without destroying the life of the woman. But granting that the uterus could have been removed and the woman recover from the operation, much of the cancer would have been left, and the operation could not have prolonged life. This is not the first time that I have protested against the abuse of laparotomy, as will be shown by the following extract from a paper read before the Section on Obstetrics and Gynecology, at the May, 1891, meeting of the American Medical Association at Washington:

> There is too much laparotomy done and too many men are doing it; men who know too little about the diagnosis and pathology of abdominal or pelvic diseases, or about the best technique in operating and have few facilities for doing such work. Continuously good laparotomy work cannot be done except by men who largely devote themselves to this department of special surgery, and with such men some cases are operated on where the indications do not justify it. . . . As the experience of an honest surgeon widens, he operates relatively less frequently, and he can recall cases that he does not believe should have been operated on. An honest, intelligent and careful man may, when young in observation and practice, make mistakes in the selection of suitable cases for laparotomy, but this is less frequent than it was a few years ago. It is criminal to do dangerous or capital operations while ignorant of the best methods of doing such work, or for the purpose of adding a little cheap glory to our reputation; or to report cases that apparently recover from the immediate effects of the operation as permanently relieved before the final results can be appreciated. Such men usually have many bad results or deaths that they do not report so promptly, and the profession, or the people, seldom hear much about them.

As I will include in this report a series of selected cases of abdominal section, the time allotted me will not admit of a detailed description of my technique in such work, so I will mainly reserve this for another occasion, and confine my remarks to a few general questions in which all laparotomists are interested.

Chemical germicides, either in solution or on sponges, the hands or instruments, should not be used on healthy peritoneum, or on denuded surfaces where the success of an operation depends on the union of coapted parts by adhesion, for if used strong enough to destroy microörganisms, they will also destroy the surface layer of cellular elements that need to be preserved as the most potent and powerful factors in combating the invasion of pathogenic bacteria. The peritoneum is a peculiar structure, and its single layer of endothelium seems to be endowed with great antimicrobic powers, so that the introduction of pyogenous microbes may cause but little if any disturbance. This fact has been conclusively demonstrated by observation in intra-peritoneal surgery, where cavities of pus, with the streptococcus, or staphylococcus pyogenes; aureus and albus, have ruptured in the peritoneal cavity and caused no peritonitis or septic infection. The cellular elements of healthy tissues are always ready to battle against the introduction of poisonous microbes, but this property is more highly developed in the leucocytes. The experiments of Grawitz, Laruelle and Waterhouse proved that the introduction of pyogenous microbes into a healthy peritoneum was usually harmless unless some irritating substance was present. Laruelle used fecal matter and bile. Pawlowsky found that the chances of peritonitis from the injection from pure cultures were greatly increased by the presence of irritating antiseptic solutions. The chemical germicide will never destroy all the bacteria that may enter the peritoneal cavity from unclean surgery, or from the rupture of a pus cavity, but it will, just as bile and other irritating substances do, deprive the peritoneum of its endothelial layer, thereby leaving an open connective tissue space with but little resisting power against septic invasion; the few or many bacteria left in the peritoneum are given a fertile nidus in which they may multiply rapidly and cause fatal peritonitis. But if perchance, the patient escapes septic infection, local or universal adhesions are formed that cause great suffering and may cause death. This has been positively demonstrated by the experiments of Delbet and Marcel on the action of antiseptics upon the peritoneum, published in the *Annales de Gyn.*, 1891. It is also the observation of experienced laparotomists that secondary operations for peritoneal adhesions are more frequently required in cases where antiseptics were used in contact with the peritoneum. If we do an aseptic operation we do not need antiseptics, and if the operation is not aseptic, antiseptics will not make it aseptic, so that we may lose much and gain nothing. Antiseptics may be used before and after laparotomy, but not during the operation, and if the hands, sponges or instruments have been in a chemical germicide they should be washed in clear water made aseptic by boiling before they are brought in contact with the wound in the abdomen or the peritoneum. Everything used in a laparotomy except catgut and kangaroo tendon may be made aseptic in a Koch's or Arnold's sterilizer, or by boiling; hence there is no necessity for using an irritating and dangerous chemical germicide.

Pozzi does not now use antiseptics after the abdomen has been opened, and Sänger and Veit have abandoned them, while Bantock, Tait and other distinguished laparotomists glory in the fact that they have never used them.

The best immediate and subsequent results in abdominal and pelvic surgery that have been recorded are in the practice of men who do not use antiseptic germicides. My experience and observation teach me that many of the most persistent advocates of antiseptics do not correctly appreciate the practical value of surgical cleanliness, but expect the antiseptic to make all aseptic; and just here lies a great objection to the general use of chemical germicides, and many women have died of septic infection, or have been maimed for life from peritoneal adhesions because of reliance upon such means. If everything is not made practically clean without the germicide, we cannot do an antiseptic operation by using it. If all abdominal surgeons correctly appreciated the value of, and the best means of accomplishing surgical cleanliness, septic infection following laparotomy would be comparatively infrequent.

As I have said at another time, the spray is of no value, for the excellent results in laparotomy done in crowded amphitheatres show that the danger from atmospheric infection is practically *nil*. Some men who use the spray, Don Quixote-like, while pursuing an imaginary foe, allow the deadly enemy to enter through numerous neglected channels—the hands, sponges, sutures, instruments, etc. Every operator should observe the broad principles that make the foundation of all good surgery, but if he neglects the details he will be disappointed in the results.

I will not detain you with my views of the best means of making and keeping everything aseptic in abdominal and pelvic surgery. I have treated this subject in detail in a paper read at the New York Academy of Medicine, in September, 1891, before the American Association of Obstetricians and Gynecologists, a copy of which has been placed in reach of more than half of the members of the medical profession of this country, and my position is generally known. Since I have practically excluded chemical antiseptics from the operating room in laparotomy and have a specially trained nurse and experienced assistants, my patients seldom have an untoward symptom, and usually make an uninterrupted recovery without elevation of temperature or acceleration of pulse. Most of my recent operations, however, have been done in an elegantly arranged operating room where all the details of an operation may be conveniently made aseptic. This cannot be so easily done in operations in private houses. But no microörganisms may be carried into the peritoneum by the operator, and still the patient may die of septic infection caused by pathological products within the abdomen or pelvis containing pathogenic germs which every precaution known to abdominal surgeons will not remove. Nor is it possible from a physical examination during an operation to form an intelligent idea of the relative degree of virulence of pus found in the abdomen or pelvis. It may be impossible to make a culture from the contents of a large pus tube while the few drops of pus from a salpingitis in the other appendage are swarming with malignant pyogenous microbes. This will, in a degree, explain why some patients apparently have a greater resisting power against septic infection than other patients under what seems to be similar conditions; in the one instance the pus is practically innocuous, in the other it is actively contagious; one person may recover from rupture of a large pus cavity into the peritoneum, another may die from the rupture of a small one.

Bacteriologists in this country and in Europe have recently made frequent examinations to determine the character of the pus in tubes removed by laparotomists. Menge (*Centralblatt für Gynekologie*) examined the contents of the tube in twenty-six cases of salpingitis operated on at Berlin in August Martin's clinic. In *eighteen* cases the contents were absolutely sterile, while in eight cases microörganisms were found. In two the streptococcus pyogenes; in one the staphylococcus pyogenes albus; in one a saprophytic rod that was cultivated upon agar-agar; in one a diplococcus that could be stained by Gram's method; while in but three cases was the gonococcus of Neisser found. In one instance the gonorrhœal pus escaped into the peritoneal cavity and caused no specific peritonitis. Bumm claims that the specific action of the gonococcus is confined to cylinder epithelium, and that it does not invade the peritoneum; and Koch says the question is in doubt. However, we know that gonococci are found in the sac of the knee-joint, which resembles the peritoneum. If examinations were made of the pus from gonorrhœal salpingitis in the early stages, the specific germ would probably be more frequently found, but the gonococcus is a sensitive organism, and its presence will seldom be demonstrated in the abundant pus of the old abscess. In the September (1890) issue of Johns Hopkins' Hospital Reports, Dr. Howard Kelly publishes a case in which Dr. Ghriskey demonstrated the presence of colonies of gonococci in the pus cells. Dr. Kelly says: "In the case in question this observation was made in the tube least affected, which microscopically scarcely seemed to contain any pus. No cocci at all were found in the large tube full of pus."

Orthmann and Westermark found the gonococcus in one case each. Probably there are cases recorded that have escaped notice. Dr. Hunter Robb (the *Johns Hopkins Hospital Bulletin*, March, 1892) reports a case where he removed both uterine appendages. The left tube contained a large quantity of pus, while there was but little pus in the right tube. After a careful bacteriological examination he says:

"Cultures and smear preparations made from the right Fallopian tube and vermiform appendix immediately following the operation were pure cultures of the streptococcus pyogenes. Cultures taken during the operation from the pus which came from the left tube were negative."

Tait believes that the character of the pus in some pelvic abscesses is similar to that found in an ordinary cold abscess. Pathogenic microbes may be destroyed by the cellular elements and secretions of the system, by the presence of bacteria that act antagonistically toward one another, or by an autotoxic secretion that stops or retards their development. The presence of microörganisms in all cases of fatal peritonitis has been proved by the observations and experiments of Laruelle, Bumm, Fränkel and Predohl.

I will conclude this paper by briefly giving my method of suturing the abdominal incision, and reporting a few selected abdominal sections, illustrating some of the conditions for which the operation was done, and the immediate and subsequent results.

In selecting a method of suturing the abdominal wound we should adopt the means that will best prevent stitch or mural abscess and ventral hernia. There are other considerations, but these are the most important. Ventral hernia may occur in any case where the deep fascia is not held together until it unites firmly, and this can best be accomplished by separately suturing it. If we attempt to perfectly coapt it by the interrupted suture introduced through the thickness of the walls the tissue included will be so constricted that there is danger of painful abscesses, and we will not accomplish what is expected. But by suturing the fascia separately the coaptation and union are perfect without the danger of abscesses from strangulation of tissue. Since I have practiced the following method I prefer it to any other, and the results have been beautiful. I use the kangaroo tendon, and with a straight or curved needle begin at the lower angle of the wound and close the peritoneum with a running stitch. The deep fascia is next closed in the same way, and then the superficial fascia and fat; the suture is now cut and the end buried in the tissue. The skin is united by superficial silkworm gut sutures introduced with a small curved needle. The suturing by the tendon may be done in one minute, and the silkworm gut may be quickly introduced and tied. I prefer the tendon to catgut because it is more easily made aseptic, and will not be absorbed until union is perfect, and I use the silkworm gut because it is one of the most aseptic sutures, as has been recently emphasized by the results of the bacteriological examinations of sutures removed at the Johns Hopkins Hospital. Only one piece of tendon is used in suturing an average abdominal incision. The silkworm gut may be removed on the fifth or sixth day, and the surface will be dry and union perfect. But the buried tendon will hold the surfaces together for two or three weeks before its integrity is so impaired as to destroy its resisting power. I do not now expect to be annoyed by stitch or mural abscesses, or ventral hernia. Dr. Gill Wylie, and a few other operators, suture the fascia separately with catgut, but the sutures tied on the surface over the incision are introduced through all the thickness of the wall. Dr. H. O. Marcy closes the wound with the buried tendon and uses no superficial suture. His technique is beautiful and his results perfect, but the time required to close the abdomen is too long in the practice of the average abdominal surgeon. He has done more to popularize the tendon as a buried suture than any other man, and the results of his work in this line are invaluable.

THE BATTLE WITH GERMS.

Read at the meeting of the Ohio State Medical Society, May 4, 1892.

BY JULIA W. CARPENTER, M.D.,
OF CINCINNATI.

Knowledge of the cause of infectious diseases is considered one of the achievements of the present day. Chemistry and the microscope, wielded by indefatigable energy, have brought to light some of the little things that confound the mighty. These microscopic travelers have been traced in their wanderings through the labyrinths of the human body and their manner of warfare studied.

It has been shown that when these microörganisms enter the body those that are not cast out of the system, are attacked by the white blood corpuscles and other wandering cells called phagocytes. These cells take the parasites into their interior, where they are killed and disintegrated. The destruction of the bacteria in the cells is a *chemical* process. In fatal cases the bacteria poison the cells that engulf them; or when the infection is overwhelming; there is no battle at all, it is simply a surrender at sight.

Again it has been shown that fresh blood, serum, tissue juice and saliva have germicide properties, but not to an unlimited degree. The saliva will destroy the typhoid and cholera bacillus if they are not too numerous. The diphtheria bacillus and pneumococcus are not veiled, but lose their virulence.

The destruction of the bacteria by the fluids of the body is also a chemical process. The first, called the phagocytic theory, and the second called the chemical theory do not conflict. The first is a chemical process inside the cell, the other a chemical process outside the cell, but the fluids of the body contain the secretions of cells.

These are the methods of the destruction of germs in the body, but the reason why the cells win the battle in one case and lose it in another, cannot be demonstrated with our present microscopes and chemical tests. It depends on a yet unknown something, called for convenience vital force, of which some persons have more, some less. The highest degree of vital force which gives resistance to disease is called natural immunity. This is seen when many are exposed to a poison, as small-pox or diphtheria. All do not take the disease. some have the normal vital power that offers the necessary resistance. Living tissue in a healthy state can destroy septic bacteria. If this were not so every one would have tuberculosis, for no one escapes breathing, at some time, air full of the tubercle bacilli. It is when the vitality of the body is lowered that that certain something is wanting that can destroy microörganisms. The vital force of the cells is the protecting power.

To prevent the inroads of infectious diseases there are only two ways, one pertaining to germs and one to the individuals. As to the germs, they must either be destroyed outside the body or forced to keep at a respectful distance. As to individuals they must cultivate the vital power that gives immunity. Can either of these things be done?

As to the first, are there any ways to destroy germs outside of the body, available for every day life for every one? What say the indefatigable workers in the field of bacteriology? They tell us that one of the most powerful destroyers of bacterial life is—*sunshine.* For instance, speaking of one of the most virulent of germs, the bacillus of anthrax, supposed to live in the soil, they say the anthrax spores are so tenacious of life, so resistant, that nothing in the soil can destroy them, only *sunshine on the surface.*

The little tubercle bacillus, a microscopic line, the dreadful scourge, that carries off more than any other one disease, the little rod that calls together the learned from all parts of the earth in great convention, what statements do bacteriologists make about this monarch? The following: "The tubercle bacillus, very tenacious of life, is found alive after being buried long in the earth, or even after exposure to ordinary weather, but is killed after *long exposure to sunlight.*" Are the rooms of consumptives flooded with sunlight for the protection of others, or is the sun shut out to save the carpet? The subject of sunshine as a germicide for every day life has not been emphasized, but medicinal germicides have been advertised the world over.

Can vital force be cultivated? Without sunshine and fresh air, never. Sunshine, besides being antagonistic to germs, has a wonderful influence on the body, imparting the deficient vital power by a process as unknown as the vital force itself. The human body as well as the vegetable world utilizes sunlight. The whiteness of the plant grown in the cellar, and the green color of the same thing grown in the light, have their counterparts in human beings. Just what is the influence of sunlight on nutrition and nerve force we have no methods at present of estimating, but enough is known to induce physicians to warn people against shutting the sunlight out of their homes for the double reason, that it gives vital force to people and takes it away from germs.

Is the warning needed? Sunlight is shut out of every home as if it were the germs themselves. Take a drive through the suburbs of any city, a sunny winter morning when a little sun, a warm hearted visitor, should receive a hearty welcome. Every window toward the sun is closed by shutters, shades and curtains, usually all three. If uncovered at all a square foot is the most. Whether palace or hovel the sun is barred out in all alike. Please notice if you have not already done so.

Plants with infallible instinct turn to the sun, man with fallible reason turns away from it.

Another forgotten requisite to vital power is fresh air. The best way to prove its necessity is to look at the effects of vitiated air. The carbonic acid from the lungs and the emanations from the body soon make the air unfit to breathe. As it gets to this point it causes languor, headache, an oppressed feeling and various uneasy sensations. An eminent physiologist very accurately says: "It is a wonderful fact that the body after a time adapts itself to such vitiated air and that one soon can breathe, without apparent inconvenience, an atmosphere which, when one first entered it, felt intolerable. Such an adaptation, however, can only take place at the expense of a depression of all the vital functions, which must be injurious if long continued or often repeated." The proof of adaptation is well shown by the experiments of Claude Bernard. A sparrow is placed under a bell glass of such a size that it will live for three hours. If, at the end of the second hour (when it would have lived another hour) it be taken out and a fresh healthy sparrow put in, the fresh healthy sparrow will die instantly. The condition of the sparrow, at the end of the first hour, is the state of most persons, and where is the resistance to invading bacteria?

There is a growing dread of air that is most remarkable. People are actually afraid of it. It shows itself on all sides. If a street car is packed, and one, near the door, opens it, it is as quickly closed by another; and until it is actual summer, if one opens a window, all frown and move away as if it were a leper. Steam cars are no better. Returning in the early spring from a neighboring town, though the temperature was 55° F., each ventilator and window was closed and the stove red hot. As no one was nearer than five seats I ventured to open my window. In five minutes the conductor approached saying, "I must shut the window, they are complaining of the air." With one window open in the whole car a draught was not possible. A fish might as well be afraid of water as people of air.

Look at the latest luxury, so-called, in cars, the vestibule train, all closed up so the whole train is like one long car. In the ordinary car there is now and then a puff of fresh air from the door, now it is a puff from the next car no fresher than your own. What is this atmosphere in which one is shut up for twenty-four hours? Was there ever a car filled with only healthy people? The breath from the healthiest is refuse material, and to this is added the breath from some that have catarrh, dyspepsia, imperfect teeth, incipient phthisis, and the breath from various other invalids traveling for health. Some smoke is also mixed with this, as the smoking room being small the door is usually open. Opening one's own window cannot destroy this mixture and inhaling it twenty-four hours puts one's vitality at least as low as that of the sparrow at the end of the first hour, and resistance to the germs inhaled cannot be expected.

People often say they took cold traveling. They had an influenza from the germs they inhaled and could not resist.

What about ventilation at night? The exchange of carbonic acid and oxygen in the lungs is not the same during sleep as when awake. More oxygen is taken in during sleep and stored up for use the next day, but how many give themselves more air at night than in the daytime?

A few months ago there was published in one of our journals a statement from some French physician as to a new treatment for phthisis which had brought about wonderfully good results. The new treatment was simply leaving the windows of the sleeping rooms partly open at night. This is amusing in the light of to-day, but as it is the national custom in France to keep all the windows closed at night for fear, as they say, of sore eyes, it was not so strange that he was amazed at the good effect of fresh air at night.

Physicians are by no means without blame in their example as to air. Many ride in close carriages shut up almost the same in sunshine as in storm. In their assembly rooms one might often suppose they were solving the problem as to how long they could breathe the same air over and over and the discussions still continue rational.

There are some physicians, however, in our city, who have the courage to use out door air as an aid to treatment in some acute diseases, as pneumonia, and have all the windows open. Of course the result is good.

There ought to be a National Department of Health, and one of the chief duties should be to protect people as far as possible from all these so-called pathogenic organisms. And until people have the knowledge to protect themselves, they should be protected by law. For instance, garments that have wiped up the unspeakable infectious dust of the streets should not be allowed in any church, theatre, school or any assembly room. Of course persons have the right to stir up such an atmosphere and breathe it if they wish, but they have no right to subject another to it. Dreadful mistakes are made from lack of knowledge. The law of absolute cleanliness holds good outside of surgery. The results of Listerism are needed in more than one department.

Architects should be taught the laws of health so they will not turn beautiful homes into hospitals. Whether they need this instruction or not, look at one house, which is only a sample of many. There it stands alone in the centre of a large lot, facing the east, so the whole length of the house has the southern exposure so poetically described by novelists. But what is there on this sunny, airy side of the house? All the halls and numerous closets. On the north, where there is no sun, are all the rooms and bay windows. Windows toward the east catch the morning sun except those on the first floor. No ray of sunshine ever enters there. It is barred out by a porch with a roof so wide and slanting so low that the sun never stoops low enough to peep in. We speak of the coffin lid crystals of the triple phosphates; the term might well be applied to this kind of a porch roof. If the house could be turned around, the north side on the south, it would be a model.

We have a fine government building occupying half a block. There are large windows, large corridors, but most of the work is done in the interior by gaslight.

Architects are not taught that sunlight and fresh air are germicides, and opposed to phthisis, diphtheria, etc., and so they cannot be blamed. In the meantime, however, they go on making the windows smaller and smaller, and the third story of homes almost without the possibility of ventilation.

If the laws of nature cannot be changed, why not follow them? The foundation laws of health are as ignored as if they were yet to be, discovered. That sunlight and air are man's best friends one little dreams. The life of to-day is a cultivated one contrary to nature. It brings about a lowered vitality and susceptibility to the so-called pathogenic microorganisms, for germs can not attack actively growing tissues, they can not affect man unless the tissues have been previously injured.

If the normal vital force gives immunity from these infectious diseases, and its lack gives susceptibility, instead of saying some germs are pathogenic to man, would it not be more correct to say, it is *man* that is so often pathogenic and not the germs.

THE ESOTERIC BEAUTY AND UTILITY OF THE MICROSCOPE.

BY EPHRAIM CUTTER, LL.D., M.D.,

OF NEW YORK.

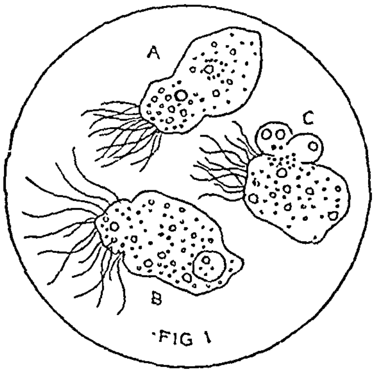

FIG 1

FIGURE 1.—A. Asthmatos Ciliaris, mature form.
B. Asthmatos Ciliaris, with inside young.
C. Asthmatos Ciliaris, mature form, the budding process going on. Patient of E. Cutter.

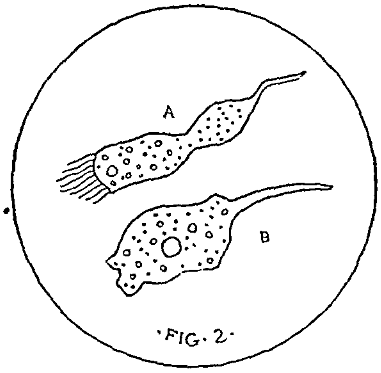

FIG. 2.

FIGURE 2.—A. Deformed Ciliate Epithelium from Air Passages in La Grippe.
B. Another specimen without Cilia. Patient of E. Cutter.

IV.

ASTHMATOS CILIARIS AND GRIP.

Epidemic influenza, or grip, is not a new disease. To repeat, I am grateful to American microscopy for views of grip which are positive and tangible. One was once accused of jumping to conclusions too quickly and without sufficient investigation, and told that if he had an idea he ought to stick to it, develop it, and not sacrifice himself. Let us learn from critics and take a jump of fifteen years backwards to an observation. Fifteen years is not a too quick jump to make, and must be safe.

June 20, 1877, I was in Cleveland, Ohio, studying the causes of disease with Dr. Salisbury. He had the grip, and showed me, under the microscope, in his excretions from the air passages (*a*), a dead infusorium he called asthmatos, and mentioned in Kent's Infusoria, page 466, and the Micrographic Dictionary, 1883, as a genus of cilio-flagellate infusoria. "*Characters:* free, rounded, with an anterior bundle of cilia and flagelli-form filament. Asthmatos ciliaris, length 1-1200 (Salisbury);" (*b*) a living lively and mature specimen that died under our sight; (*c*) several young ones which were globar, provided with beautiful cilia, whose motions were as follows: 1. Some rotated on their own axes, because of the graceful waving backwards and forwards of the cilia moving together like flails beat in unison as to time and direction. 2. Some, where the wave motion of the bodies were less than the wave motion of the cilia. 3. Some had a non-synchronous movement of cilia; that is, while one cilium waved to the right, another was waving to the left, and so on. In other words the cilia did not move together, but were independent, and moved asymmetrically.

The cilia were not arranged in straight lines, or rows, side by side, but were planted as trees come up on a conical or rounded hill, or whiskers on the chin.

Size was on an average about that of the oval mucous corpuscles which show the so-called Brunonian movements.

The cilia were as long and longer than the diameter of the globar body. Dr. S. spoke doubtfully of them, and was not sure of them until the microscope revealed a few of them in the field. He said that sometimes the field is full of them in full activity, and so I have found them.

Since this observation, many others have been made and published confirming it. The following additional motions have been observed.

a. A specimen has been seen to turn completely over, so that the cilia faced in the opposite direction, and then to turn back again to their original position.

b. They have been observed to bud.

c. To divide by fissure.

d. To have a parturition of a young one, which moved from one side of the mother to the opposite, and then issued a new being.

e. A bud of about one-quarter the diameter of the mother would pull off, taking with it a filament of the parent substance, so that mother and young were connected as with an umbilical cord.

They would continue to separate more and more, the filament or gubernaculum growing more and more attenuated until it broke.

The part attached to the mother was drawn into it. They separated as if forced apart by some one as candy is pulled by a confectioner.

Prof. Paulus F. Reinsch, of Erlangen, Germany, saw this phenomenon with me, and said it was a new observation in genesis.

f. Besides these, the asthmatos locomote sometimes from one part of the field to another, and in opposite direction to each other. The universal prevalence of grip has made it an easy disease to observe. The best time to collect the forms is the first stages, when the coughing and sneezing are on. Later, it is more difficult to detect the asthmatos, as they seem to penetrate to the deeper air passages, to the maxillary antra, and to the frontal sinuses even, and are more difficult to dislodge. Still, they leave behind irritation after they have relinquished the outer air passages. Usually they are more abundant in the clear, glairy, transparent mucus than in the darker and white excretions.

HOW TO COLLECT.

I use the following modes:

1. Place the specimen of sputum on a slide and spread out in a thin film. Examine under a one-quarter inch objective which has a working distance of one-eighth of an inch at least. I like a large cell, say two inches by five-eighths of an inch. Mine is of brass and glass. Any one can make a cell by heating sealing wax and moulding it into a cylinder about one-eighth of an inch in diameter, and long enough to be laid in the above size on a slide. If, then, this slide is gently heated from below so as to melt on the sealing wax all around, the cell will be complete.

2. If immersion objectives or the clinical microscope are used, a cover is needed, and the extra excretions removed by a bibulant, as cloth or paper. I prefer the light from a good adamantine candle, or oil lamp. Mode one gives the largest field at once and saves time. Higher objectives may be used. I have photographed the asthmatos with the one-sixteenth and the one-seventy-fifth inch objectives, and demonstrated the microphotography to many people.

It is not now denied that their forms exist in grip.

WHAT HAS BEEN SAID TO ME ABOUT THEM.

1. "Pshaw! No such thing as a cause of grip." This was uttered by an old physician — one of the most wealthy people in his city, and made so by his profession. This remark is not worth putting down here, save that he is in the full tide of a large practice, and has to treat the grip without microscopy, and so spoke from no personal observation in this decided way, settling for himself and his patients this question at once. He knew nothing about infusoria, nor, from his own success in reaping the monetary reward of his professional life, could he think it needful for him to know. Useless to argue with such.

2. Others said that the forms called asthmatos were deformed ciliated epithelia. This narrows down the question to asthmatos versus deformed ciliated epithelia. One gentleman showed me a physiology where these forms were figured as deformed epithelia found in grip. Dr. Leidy, in 1879, came out and took the same position, and gave figures of the forms he had observed in the excretions of patients. These statements were enough to satisfy them and those who did not use the microscope, in favor of ciliated epithelia deformed.

3. Some years ago I was asked by an eminent physician to review his work on throat diseases, which is deservedly highly esteemed. "Why don't you put in something about the asthmatos?" "Send me an account and I will do so," was his answer. I sent him a description, with drawings and specimens. He replied that he would publish this account, but not the cuts, as he had taken the specimens and cuts to three eminent microscopists, *none of whom agreed with each other* in their observations, but that one showed him in an infusion of grass under the microscope just such forms as were figured in the cuts, and said that infusions of grass probably had been mixed with the excretions."

I replied, "Give me the name of your savant." He would not, and added that I had no reason to be vexed. I replied, "Your action in rejecting my cuts says louder than in words, 'I do not use them, as infusions of grass were probably mixed with the excretions from the air passages.' Now, to settle this point, please show to the gentleman who made this remark the enclosed list of the names and addresses of eighteen persons who have seen me take excretions from the air passages of patients suffering from grip, and demonstrate the forms I call asthmatos without any admixture of the infusion of grass nor anything else." In this list were the names of my medical teachers, Oliver Wendell Holmes and Dr. H. I. Bowditch. The cuts were inserted.

4. Another gentleman said something about the asthmatos to me publicly which I relate here as a matter of history solely. I was called to see a child 2 years old, said to have lung fever. Face red and countenance expressive of great suffering. Incessantly and noisily coughing and raising; head hot; pulse normal; breathing normal when not coughing. From the pulse and respiration I doubted the pneumonia. Down the upper lip ran considerable thin, acrid, watery mucus from both nares. Some of this I scraped off, and by aid of the clinical microscope at once found it swarming and alive with asthmatos ciliaris. I used an atomized, saturated watery solution of the benzoate of soda. The case recovered sooner than I wished, for I was anxious to study the unusually lively forms. Thinking that this was the way to practice medicine, and innocently anxious that my medical brethren should know about it, I read a paper to them on this case, illustrated with lantern projections. After I got through, a gentleman spoke, and as I was busy with caring for my lantern (I always do this, so as to be sure it is in order for future use), I did not notice what he said until I caught the words: "Dr. Cutter knows nothing about this subject." I then recognized the voice as that of a gentleman I had known to bulldoze another who had read what I thought was a very nice medical paper on the lines of pleuritic effusion, and at whom I was very indignant, because of his palpable injustice and want of professional courtesy to the reader. I made up my mind that if he ever talked to me in that style, I would give him the treatment I thought he merited. To tell the truth, I had forgotten all about this, and had counted only on a courteous, if not warm reception. In an instant it flashed upon me what to do. So I called the gentleman to order, saying that I had come there in good faith, on the principle that if any medical man knows, or thinks he knows, anything new or valuable to relieve suffering and cure disease, he is bound to make it known to his brethren, and so long as he observed the rules of good breeding, he was entitled to a respectful hearing, and hence I would not be insulted by him or any one else. I stood before him

and said: "Tell me if I lie," and that there were other observers than myself, covering several years and thousands of cases. Had he told me this, I was intending to sue him for defamation of character, because he appeared to me to stand athwart means which would cure cases if used. Not to stretch out helping hands to sufferers because of a false, not to say insulting, statement, seems to me worthy of fiends, and unworthy of men whose business it is to mitigate, not prolong suffering. He then took the ground that these forms were ciliated epithelia, and said he had a slide with some that he had taken that day. He said, "Mr. President, I would show them, but I have no microscope." Said I, "Mr. President, I have a microscope which is at the gentleman's service." Said he, addressing me, "Your microscope is not good for anything, and I cannot use it." Said I, "Please let me try for you." I took my clinical microscope with a $\frac{1}{16}$ inch objective, four systems, 180° angular aperture, made by the late Robert B. Tolles, of Boston, whose reputation as maker in Europe (as I found out for myself) is second to none, and found the form the doctor alluded to. I then handed the microscope to him and he made believe that he looked, and said, "Mr. President, I can't see anything."

I replied, "*Mr. President, I can, and I can furnish* microscopes, but not brains." I could not help saying this, such was my indignation at the obstinacy to being convinced by *a man who had characterized* the beautiful $\frac{1}{16}$ inch objective of Tolles as good for nothing, when it was one of the best ever made.

After adjournment, I asked the gentleman if he had seen the forms he noted in any other patients? He replied that he had not; so an appointment was made to see cases the next day. I had my cases there, but the gentleman did not appear, because he was too busy.

Why I believe in the Asthmatos, and regard the treatment of grip, based on this belief, as one of the most beneficent and useful *American* uses of the microscope:

a. The asthmatos is not found in ordinary colds. Ciliated epithelia are. Others may, but I have never found human ciliated epithelia in motion on the body in ordinary colds.

b. I was never taught that there were ciliated epithelia deformed. With these exceptions including observations above named, I never was taught that ciliate epithelia resembled the asthmatos. If these forms are deformed epithelia, why should it not have been taught me to prevent mistakes on my part?

c. The asthmatos has been found on the mucous membrane of the conjunctiva of people suffering with grip. If these forms are deformed ciliate epithelia, why have not histologists taught that they are found on the human eyeball?

d. The asthmatos reproduces by budding, cleavage, gubernacular method and parturition from the parent. There is no authority for such reproduction of deformed ciliate epithelia. If there is, I want to know it.

e. The fact that the Philadelphia savants found forms like the asthmatos in infusion of grass, shows a strange habitat for deformed ciliate epithelia human. I am aware of the great vitality of human epithelia in hydrant water, and have often observed them, but never have found ciliate epithelia. I have searched in the hydrant water of about thirty cities and towns and in the canals of the Netherlands for the asthmatos, but never found one I felt sure of until August, 1890, in a canal between Harlem and Leyden, Holland. I have found plenty of free and actively moving ciliated epithelia in the juice that laves the mantles of the common marine soft-shelled clam, along with cilio-flagellate infusoria, I think.

f. The most practical evidence to me of the forms in question, flagellate infusoria and not ciliated epithelia deformed, is their behavior to treatment with quinine, salicin, menthol, the fumes of burning sulphur and nascent chloride of ammonium, to name no more. I have found patients suffering with grip and infested with the active and lively forms in question, and made them inhale the fumes of burning sulphur, and seen them instantly relieved of the bad symptoms. Examining the secretions just after the inhalation and relief, I have found like forms in question, dead and motionless. If deformed ciliated epithelia are thus affected by burning sulphur fumes, for example, it is something novel in medicine, and not taught.

So long as I find that grip patients are relieved and cured by killing and removing what I believe to be the asthmatos, I shall not cease to be grateful to the Netherlanders for inventing the microscope, and while I respect the opinions of those who differ, I *shall continue to follow and advise the practice* here laid down, as a brilliant gem in the crown of American medicine.

1730 Broadway, New York, April 16, 1892.

THE RELATION OF BACTERIA TO DISEASE.

An Address read before the Illinois State Medical Society at Vandalia, May 19, 1892.

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From the earliest times to our own the mental bias of physicians has been strongly toward philosophizing. This has been true because of the inherent difficulties of the subject matter with which pathology deals. That it is not due to lack of scientific method in early times, is conclusively shown by the fact that modern theories upon the subject are not in accord. And *some* theory is just as necessary for a working basis for the doctor of to-day as it was when "The Genuine Works of Hippocrates" contained all the knowledge which a progressive doctor needed to know. And other things being equal, a physician's success and usefulness may be guaged by the completeness of his theories regarding disease, and the thoroughness with which he carries them out in practice.

The history of the development of bacteriology gives ample evidence that it has followed the common paths of the progress of all human knowledge. It has been marked by brilliant discoveries, boundless enthusiasm, bitter controversies and persevering toil, but it has also been crowned by constant progress, and one by one its problems are reaching solution.

A brief review of the main facts in its history will assist in appreciation of the present status of the subject. Further, by the law of its method, this address is confined to a consideration of general considerations, and must omit technical details. The difficulties of practical work in bacteriology are so great, that constant reference to standard text books is imperative in its prosecution.

There are a few fundamental questions about which all of the discussion has hung from the time of Anthony Van Leewenhock's communication to the Royal Society of London, in 1683, to the recent one of Klebs on *tuberculocidin*.

Van Leewenhock's discoveries raised the question of the existence and forms of bacteria, but the greatest controversies of the science have been in settling the point as to whether bacteria are really the prime factor in diseases. Finally, the science is concerned in determining the manner in which the microörganisms produce the clinical symptoms, through their presence primarily, or secondarily through their products. That is, are the results due to bacteria themselves, or to ptomaines, albumoses, or enzymes.

The communication of Van Leewenhock, referred to, settled the question of the existence of bacteria, and the discovery of the various species has been merely a matter of time and perfection of microscopes. About 200 years after the first announcement of the Amsterdam linen draper, Ferdinand Cohn of Breslau, made a classification which remains substantially unchanged. In this classification morphology is the basis, and cocci, bacilli and spirilli, are the three groups under which all forms are classified. The opportunity which the discovery of bacteria presented for building up theoretical systems of pathology, was not neglected by the physicians of any of the centuries since the primitive lenses of the great Dutchman set the ball rolling. Of these theories that of Plenciz (Vienna, 1762) was the best, both theoretically and practically, since some of his teaching stands to-day.

The sharpest scientific controversies, however, in the history of the science have arisen over the question of the origin of bacteria. The suggestion made by Needham, 1749, of abiogenesis or spontaneous generation, was eagerly taken up and defended. He advanced the theory because fermentation and decomposition occurred in flasks which, with their contents, he had boiled, and as he thought, thoroughly stoppered. Bonnet, of Geneva, suggested that Needham's flasks were not efficiently closed, and later Spallanzoni proved the correctness of the suggestion. Flasks containing test solutions securely stoppered and boiled by him for an hour, remained sterile.

The next claim was that germs generated spontaneously in the air. This was disproven by two investigations. Schultze arranged sterilized solutions in such a manner that air could enter them only after passing through sulphuric acid or caustic potash solutions, and they remained sterile. Tyndall's solutions remained sterile in a glass chamber, the dustless condition of which he demonstrated by passing a beam of light through it. In 1854 Schroeder and Dusch showed that a cotton plug is an efficient germ filter. In 1860 Hoffman, and in 1861 Chevreul and Pasteur, showed that the drop of water of condensation in a doubly bent tube connected with the flask, also prevented the entrance of bacteria. The first suggestion of spores came from Bonnet in 1762, but their demonstration was made by Ferdinand Cohn about a century later. He found that under favorable conditions some bacteria passed into a so-called spore, or resting stage, and that these spores were much more highly resistent than the bacteria from which they sprung. This discovery accomplished two results. It utterly overthrew the doctrine of abiogenesis, and it became the basis for practical work in bacteriology. For example, Kitasato's successful pure culture of the tetanus bacillus.

The first successful attempts to associate special bacteria with special fermentative processes, or with specific diseases, occurred about the middle of the present century. Pasteur discovered the *ferments of* wine and beer in 1857. In 1849 Pollender, and durthe years from 1850 to 1870, Royer and Davaine established the constant presence of rod-like bodies—anthrax bacilli—in cases of splenic fever. And in 1871, Koch placed their association with that disease as the primary cause beyond question.

At present the work of bacteriologists is chiefly devoted to the discovery of additional specific species of microörganisms, and to the discovery of the manner in which the organisms produce the results associated with their presence and growth.

By a violation of the logical order of this discussion, attention is called at this point to the products of bacterial growth. Physicians have long been familiar with the fact that through the action of vegetable cells upon the protoplasm of the cell plants, certain basic substances are formed, known as alkaloids, which are alkaline in reaction, most of them animæ, and which unite with acids to form salts. Again, when injected under the skin, or administered *per orem* in animals, these substances alone or combined, produce energetic and specific effects upon the end organs of nerves and upon the muscles themselves. Among these substances are atropine, chinchonine, aconitine, strychnine, *et al.*

Now bacteria are simply vegetable cells, and by their action upon the protoplasm of animal cells, they also produce alkaloids, the so-called ptomaines of Selmi, and certain derived albumens known as globulins and albumoses. A third series of substances associated with bacterial growth in the body, are the enzymes, or unorganized ferments, pepsin and trypsin.

To another class of animal alkaloids Gautier has given the name leucomaines, and he claims that they are products of normal tissue metamorphosis in the body .In this opinion he has the support, among others, of Vaughan, of Ann Arbor. Breiger, however, the highest authority on bacterial chemistry, claims that they are really ptomaines formed in the intestine by the action of bacteria. Since their chemistry and physiological action are similar, the point in dispute is as yet of more theoretical than practical importance. A number of the ptomaines and leucomaines are intensely poisonous, as are also the albumoses and enzymes.

At one time the opponents of the germ theory of infectious diseases, urged that the fact that certain symptoms followed the injection of pure cultures of bacteria did not prove that these results were due to the bacteria themselves, because they claimed, other things besides the bacteria might be simultaneously introduced. This angered and amused the zealous bacteriologists, but they have had to yield the point. Much of the controversy and uncertainty which has attended bacterial research, has been due to this failure to differentiate the results of the ptomaines, albumoses, and enzymes, of each specific bacillus. For example, as appears in detail later, the failure of Koch's lymph was due in a measure to this cause. The unreliable nature of the results due to injection of pure cultures is apparent from the following list of factors in inoculation experiments.

In using infected tissue or excreta:

1. The chemical constituents of the tissue itself.
2. The ptomaines.
3. The albumoses and globulins.
4. The enzymes.
5. The leucomaines, if present.
6. Combinations of the above.

In order to make inoculation experiments rigorously scientific, the constituents of the cultures must be used separately, and it must be known what results follow the introduction of

1. The pure culture itself.
2. The filtrate of the same.
3. The special alkaloid present.
4. The albumoses, or globulose.
5. The enzyme.

As yet but relatively little work has been done along these lines, but that which has is yielding hopeful results. This work is the direction from which protective inoculation is to come. Ever since Jenner's discovery of the protective power of vaccine —cow-pox virus—there has been a growing hope that this would be found to be only a special application of a general principle, and that similar substances would be discovered which would stand in analogous relations to at least all infectious diseases.

The enormous difficulty which attends the prosecution of this subject of vaccination, can be better appreciated by an enumeration of the conditions which modify the growth and products of bacteria, viz.:

1. The nature of the nutrient media.
2. The effects of temperature—this is very striking.
3. The state of the bacteria, whether living a parasitic or saprophytic life.
4. The presence of other forms of bacteria, e.g., of the bacillus of blue pus in anthrax cultures.

A number of theories have been advanced to account for the facts presented in preventive vaccination. Of these the one most in accord with the known facts is, that of "the development of specific powers of resistance in the cells of the body to resist specific bacterial activities."

A very striking confirmation of this theory is presented by the history of the discovery of preventive inoculation against anthrax, and as it is typical of similar work in other diseases it is given here at some length.

In June, 1880, Greenfield announced his discovery that injections of the 12th generation of pure cultures of anthrax bacilli produced no symptoms, and injections of earlier cultures in the series indicated progressive loss of virulence. In July, 1880, Toussaint reported an anthrax vaccine, and that its effect was modified by the temperature, to which the blood of the animal dead of anthrax was heated. Pasteur, and later Chauveau, working on Toussaint's plan, elaborated a system by means of which protective virus may be rapidly prepared in large quantity. It was found that at suitable temperatures the attenuated bacilli, as they are called, formed spores, and that these spores communicated their attenuated properties to the bacilli, which were cultivated from them. It thus became an easy matter to preserve the vaccinal material. In these inoculations, several injections are made corresponding to the pure cultures of the twenty-fourth and twelfth days, and intervals of twelve days must elapse between them, giving time for the development of the specific power of resistence.

Of equal interest is the discovery that the blood of some animals dead of anthrax is protective for others. For instance, the mouse blood is thus protective for sheep (Klein).

The observation of Chauveau, that lambs born of sheep affected with anthrax are immune to the disease, led up to the conclusion that as bacilli can't pass the placenta, the protective agent must be soluble. Hankin has concluded that this is an albumose. Of this albumose doses of one-five millionth of body weight kills rabbits, and doses of one ten-millionth renders rabbits immune to virulent anthrax. but again an interval must elapse between the protective injection and that of the virulent virus. This indicates, as Woodhead suggests, that the virulent and the protective principles are the same. This again is strongly confirmed by what is known concerning habituation to many vegetable alkaloids. Woodhead suggests that this acquired power of resistance may lie dormant for a long period, to be exercised only on specific occasion. An analysis of the so-called preliminary report of Professor Klebs upon tuberculocidin, is appropriate in this connection. This is a report upon treatment of about 100 cases of tuberculosis, and in 75 of them time enough had elapsed for a report to be made upon them. Most of the cases were unequivocal ones of pulmonary tuberculosis. Klebs reports in substance as follows: The substance tuberculocidin is an albumose extracted from Koch's tuberculin. Its judicious employment is not followed by febrile reaction, but large doses may cause such reaction. Its judicious employment is followed by a disappearance of hectic fever. In susceptible animals, especially guinea pigs, its use prior to tuberculous inoculation retards the development of the tubercular process. It can be demonstrated anatomically that treatment by tuberculocidin is followed by involution and dissolution of tuberculous tissue, which occurs especially in the form of an exudation in the diseased structure. Necrosis does not occur, and there is no risk of establishing miliary tuberculosis. The results are better and more rapid the earlier treatment is begun. Hectic fever is not a contra-indication. In man 2 milligrams may be tentatively given, and if followed by no considerable elevation of temperature, the dose may be rapidly increased to a decigram or a decigram and one-half. The injections may be given daily for a month, and then resumed or not according to indications. The results reported are as follows, viz.:

Of the 75 cases, 14 were cured, 45 improved, 14 unimproved, and 2 died. In some cases the conjoined use of other measures, such as hyper-nutrition, ærotherapy, rest-cure, drugs, may be indicated to improve nutrition. Unpleasant results were not observed in cases of laryngeal tuberculosis. Finally, the treatment is not incompatible with surgical interference.

A comparison of this report with the facts reported in this address, in a fragmentary way, concerning the discovery of an anthrax vaccinal fluid, shows very clearly that the investigation is made along the proper lines. It gives great encouragement to hope that discoveries of inestimable benefit to humanity may yet come from treatment of tuberculosis with a product of a pure culture of that bacillus. It shows also in a striking way, that the forced premature announcement of Koch's discoveries, was a lamentable misfortune. The length of this address already reached compels a simple reference to the present state of information concerning the other infectious diseases.

It is conceded that the bacillus of diphtheria of Lœffler is the cause of that disease. Failures to find it have arisen from a mistake in diagnosis, or lack of skill in technique, or failure to search for it in the proper position. The practical suggestions are made, that as it may develop in cases of simple pharyngitis, and may be found in the mouth days after the malady is cured, great care in local antiseptic measures is indicated in all cases of pharyngitis.

Special interest is aroused concerning tetanus, from the fact of Kitasato's success in making pure cultures of the bacillus and placing it among bacillary diseases beyond question; the conclusions of Bosaud are that almost all soil contains the bacillus tetanus, and that its presence depends upon defective drainage, hygienic conditions and degree of cultivation of the soil.

In regard to hydrophobia two things are to be said; one, that the best judges believe it due to one or more microörganisms not demonstrated, the other that Pasteur's protective inoculations do protect under favorable conditions.

Klein's review of Koch's cholera report evidently shows Koch mistaken in claiming the comma-bacillus always present in cholera, and establishes the claim that this bacillus is both found in other cases and has not been demonstrated.

The Cause of Cholera.—Woodhead reviews the ground carefully in a most judicious manner, and concludes that it is extremely probable that the comma-bacillus is the cause of cholera.

It is practically conceded that typhoid fever is due to the presence and growth of the bacillus of Eberth and Klebs. No progress has been made in preventive inoculation. It grows in water and more freely in milk.

The ray fungus is the accepted cause of actinomycosis, and specific bacilli are claimed for syphilis, leprosy and glanders, the remaining members of the infective tumors, so-called, the class in which tuberculosis belongs.

The relation of bacteria to wound infection, and to puerperal fever, is considered so firmly established, that a mere repetition of the surgical aphorism, that "he who has suppuration in plastic surgery is either a poor or a careless surgeon," is sufficient in this connection. The amount of work which has been done, and the literature which represents it, are very large. It is the direction in which at present the greatest hope lies for progress in preventive medicine. This is the appropriate time for oratorical pyrotechnics in summing up the benefits, but you are spared more than a mere mention of the names of those to whom the greatest debt of gratitude is due. There names are Semmelweiss, Cohn, Pasteur, Lister and Koch.

POST PARTUM HÆMORRHAGE.

Read before the Milwaukee Medical Society, May 10, 1892

BY S. W. FRENCH, M.D.,

OF MILWAUKEE, WIS.

Perhaps I should apologize to the society for bringing before them a subject which at first sight seems so simple: but post partem hæmorrhage does not come under our hands, fortunately, very often, but when we do encounter it, it is a condition that needs immediate attention, and no delaying or expectant plan whatsoever. I therefore bring up the subject more for discussion than for any intrinsic value that the paper may have to the society. It has been my fortune during a practice of thirteen years in this city to meet with but few cases of post partem hæmorrhage. Of course we often meet with cases that are of a slight character, which after a thorough massage of the uterus, or a good free injection of hot water, stop within a short time. But I refer to cases where the hæmorrhage is particularly severe. The only really serious case of post partem hæmorrhage that I ever had, occurred in my practice within the last month. I say serious, because it was at least eight hours after delivery before I felt that my patient was in a safe condition. The delivery was simple. It was her second child. The labor was very light indeed, and the expulsion was entailed with but little difficulty, although there was some slight laceration of the perineum, enough, however, in my belief, to put in a few sutures. She had had no anæsthetic and it was therefore a little difficult to bring the two parts in apposition. After the birth the uterus seemed to have contracted well, and the placenta was delivered. I thought things were then in a safe condition, and in order to dam back a little flow that was taking place I put a small tampon of cotton into the vagina. I then introduced my sutures, and after considerable difficulty in the case, I finished the operation. The cotton was extracted and the pulse examined, but instead of finding it reduced, I found it ranged above 120. I immediately felt for the uterus and found the fundus very near to the epigastrium. I then began massage, and I think I squeezed out in the vicinity of about two quarts of clots. The woman complained a great deal of faintness, but soon as I let go of the uterus, away it bulged up again to the self-same locality as it was before, and by continuous massage again I expressed out the same amount of clots; and it began to be a question in my mind as to how long this thing was going on. I suddenly remembered having read in a journal some few weeks before of perhaps a similar condition, in which the physician did exactly the same thing as I had done, but to the extent that he attempted to keep the uterus down. The consequence was that in keeping it down, however, there was still a considerable hæmorrhage, and eventually the patient died. He drew the conclusion that it would have been better if the uterus had been left as it was and the clots had not been expressed. This suddenly came to mind and I resolved to act upon it; and the third time when the uterus bulged up above the umbilicus, I concluded to let the thing alone and not try to express it. However, I did give a teaspoonful of ergot and some whiskey. The pulse, however, kept up above 120, and was at times intermittent. After that there seemed to be no active hæmorrhage. The woman became collapsed. All of this happened at 9 o'clock in the morning. At about between 11 and 12 I thought I detected some change for the better, and left the case to see my other patients; but I had not been absent more than three quarters of an hour before I was telephoned for to come immediately, as the patient had fainted. But as usual in those cases, when I arrived, I found that the patient had recovered from the faint, but that the pulse was still in a very uncertain and irregular condition. I then gave the patient $\frac{1}{30}$ grain hypodermically, of strychnia, followed by $\frac{1}{120}$ of atropia. I also gave hypodermically a number of injections of whiskey. This was at 2 o'clock, and by 5 the pulse had assumed a normal beat. She went on to convalescence, but it was somewhat retarded on account of the extreme anæmia that was present. In this case I used a hot water injection, and it was the first time in my practice in which hot water did not have the effect to produce a good, firm contraction of the uterus. We know there are many things that have the power of contracting the uterus. We know that there are some who believe entirely in the use of vinegar passed into the uterus on a swab. We know that the same effect is sometimes produced by squeezing a lemon into the cavity of the uterus. We know that there are some who believe entirely in the use of the fluid extract of ergot, or in ergotine injected hypodermically. We know that there are others who believe entirely in the use of hot water. But I think that the method that I pursued in this case is a method that is not generally laid down in text books. I think that the general rule laid down in text books is to clear the uterus and keep it well contracted down. Under the condition existing in my case it was impossible to keep that uterus contracted down, and it flashed through my mind that the very best way to stop that hæmorrhage was to bring about the condition of things that nature herself was attempting to do, and that was to produce a large clot in the uterus, and by the presence of that large clot a contraction would take place. I will say this, that the contraction was slow, that it was not until the next day at noon that the uterus was down in the condition that you would have wished to have found it after delivery.

Post partum hæmorrhage necessitates not only a careful but also a rapid survey of the conditions. The question is what is the cause of post partum hæmorrhage, or especially what is the cause of the post partum hæmorrhage in your own individual case. It is a question that I think you cannot always answer, because if you could answer immediately, you would then probably be better able to select your remedy for stopping it. It more often comes like a thief in the night and takes you entirely off your guard. Now, in respect to this woman, she was the last person that you would ever expect a post partum hæmorrhage in. The labor had been unusually rapid, the contraction of the uterus had been good during the whole labor. There was no delay, the blood clotted, which does not always occur. I think it has been brought up by some authors that in these severe post partum hæmorrhages the blood does not always clot. I think it was fortunate in this case, that the blood did clot, and that that clot in the uterus did act as a tampon, so to speak, to close up the uterine sinuses. That word, tampon, brings to mind that it has been considered a good plan in severe post partum hæmorrhage, where hasty means are used, in the way of hot water and vinegar, and the hæmorrhage seems to keep up, to tampon the whole uterus with antiseptic gauze, and in other words attempt to bring about a clot by this self-same pressure. Of course, the use of the gauze, being introduced into a freshly parturiant uterus in that way, is a method attended with a great deal of danger, especially of producing sepsis. Another point that came to my mind was that if you did not produce the sepsis, you might produce an absorption of your antiseptic, if you used an antiseptic gauze. If a sublimate gauze was introduced into a cavity of the uterus with a freshly denuded surface, it might have the effect of producing sublimate poisoning. The idea is to pack the uterus firmly, as if you were going to tampon the vagina. The matter of post partum hæmorrhage is a serious thing and requires the most rapid and heroic treatment possible, and it is a little difficult sometimes to select the most æsthetic means at your hands, and possibly oftentimes difficult to select a method that would be free of danger in itself, more particularly a perfectly septic one.

DISCUSSION.

Dr. W. H. Washburn: There are two classes of patients in whom we are most apt to have post partum hæmorrhage of a serious character. First, those cases in which labor is unusually rapid and precipitate, and second, those in which the labor is protracted and difficult. In the first case the uterus seems to be, as it were, paralyzed by its heroic efforts to empty itself, and in the second case the hæmorrhage is caused by prolonged efforts in the same direction. The case that Dr. French has detailed seems to be one of those that belong to the first class, where the uterus is paralyzed by a sudden and great effort. So far as I am individually concerned, I should dislike very much to leave a patient with the uterus dilated and filled with clotted blood; I could not feel safe for the future of the patient, and it does not seem to me as though that is very good treatment. To be sure, the uterus fills up with a clot, but that does not prevent hæmorrhage from taking place from the uterine sinuses, and I should think it would be a precarious thing to do. I have had one case of this kind where hæmorrhage occurred in a woman in which the labor was extremely rapid. In fact, the child was born before my arrival, and the woman was in a condition of syncope from loss of blood when I reached the house, and everything around about was perfectly deluged with blood. In that case I remember very distinctly that she had had a previous experience of the same kind, and her husband when he engaged me to attend her, told me the circumstances of the case. In that case I remained with the woman all night. I gave her stimulants immediately on arrival, and succeeded in emptying the uterus partly by pressure and partly by introducing the hand into the uterus and breaking up the clots. I kept my hands on the uterus all night. I stayed there from nine o'clock at night until daylight next morning, and that was in the winter. The woman recovered rapidly.

Another case occurred after a prolonged and difficult labor in which instruments were used. I was present as consulting physician and soon after the child was born and while I was in the kitchen with the child attempting to resuscitate it, the physician who was in attendance called me, and he was so frightened that he could not tell me what he wanted me for. When I got into the room the perspiration was dropping off his forehead. I never saw such a picture of terror; and the woman exclaimed, "For God's sake, Dr. Washburn, don't let me bleed to death;" and certainly she would have bled to death in a very few minutes, for when I turned back the bed clothes there was a steam of blood coming from her as large as my two fingers. I at once introduced my left hand into the uterus and made pressure over the abdominal walls with the right hand, and got her husband to go out and get a piece of ice, which I introduced into the uterine cavity. The irritation of my hand in the uterus caused strong contraction, and immediately after the ice was introduced the hæmorrhage ceased, and did not recur. The woman made a good recovery.

Of course there are some cases that resist all kinds of treatment. As to the injection into the uterine cavity of such substances as perchloride of iron and any substance that causes such a firm clot as that, I should not feel satisfied to try them myself. I think that in the majority of cases the introduction of the hand into the uterus, massage over the abdomen, the introduction of ice into the uterus, or hot water injections, which at the present time perhaps are more preferable and least liable to be followed by septic trouble, would be the most appropriate treatment, and treatment which would be successful in the largest number of cases.

Dr. E. Copeland: I would agree with Dr. Washburn as regards the use of substances which cause such a firm clot as perchloride of iron would. I would not feel comfortable or satisfied to adopt such a procedure. I certainly believe in the hot water injections in a great number of cases, if not all, using also strong pressure on the uterus of the patient, continued for hours if necessary, which one physician cannot do if it is necessary to keep it up for any great length of time. A man's hands will certainly tire out and he cannot do that and must call help; but those are very rare cases; I never met but one case and in that case pressure was kept up for several hours. I think in the great majority of cases of post partum hæmorrhages, and they are not very common, hot water injections constantly kept up for a long time if necessary, will control the hæmorrhage. So far as the introduction of vinegar, lemon juice and things of that kind into the uterus is concerned, I would not think of it for a moment.

Dr. Puls: Post partum hæmorrhage is an accident which happens not so very seldom after all. I remember of having had a number of cases. Of course the causes differ, but in most cases the hæmorrhage is due to atony of the uterus, and simple massage and hot water injections will suffice generally to stop the hæmorrhage. Of course, if you have a case of retention of parts of the placenta, the only course is to remove that part of the placenta to stop the hæmorrhage. Another source of the hæmorrhage is tearing of the cervix or perineum which must not be overlooked; if it cannot be remedied by sutures, the tampon will probably be the only way; a hot water douche would not stop the hæmorrhage. Kuestner lately reported a case of post partum hæmorrhage due to aneurysmatic changes of the artery and also to arterio-sclerosis as being a cause of hæmorrhage. The blood would not clot. Now, in most of these cases, wherever we have a rent of the cervix, or where we have no clotting of the blood in the uterus to stop the hæmorrhage, it is natural to tampon the uterus; and if Dr. French succeeded in his case in saving the patient, it was due to the clots. As Dr. Washburn well remarked, by introducing his hand into the uterus he induced a contraction of it to take place, and by applying the ice he got firm contraction. I do not advise the use of ice, but I advise the use of iodoform gauze to pack the uterus. It is a method adopted by Duehrssen about three years ago, and since then probably two hundred cases have been reported altogether treated in that way, with no case of septicæmia resulting. Nor has any case of iodoform poisoning followed. In my practice I have used that method probably three or four times with no septicæmia following and without any fever. The best way if you have no iodoform gauze on hand, is to take ordinary cheese cloth prepared in carbolic solution and apply that. I remember a case only two months ago where the blood came oozing out of the uterus as thick as one finger, and I felt that the woman was dying right under my hands. It was a very rapid delivery; I had nothing at all to introduce into the uterus except my hand, and I called for the basin in which I had the cheese cloth ready, and I took one of those cloths and packed it into the uterus and the hæmorrhage stopped, and I extracted the cloth the next day. I certainly would advise this method in cases of natural birth or after an abortion, not waiting to employ ergot.

Dr. Burgess: When a hæmorrhage occurs anywhere, when it has been of sufficient extent, the patient faints. In that condition the energy of the heart relaxes, and the treatment followed by the laity as long as whiskey has been known, is to pour in whiskey and other stimulants to start the heart up to pump more blood out. It struck me when Dr. French spoke of using whiskey in that case, that it was not good treatment for the reason that you only stimulate the heart to greater exertion, and perhaps, in that way increase the hæmorrhage. If a person faints it does no harm, but does good. Why not? It is the exact condition you want to bring about.

In regard to tamponing the uterus, that may be well enough under certain conditions in proper hands; but I think if you set everybody who attends to midwifery cases to tamponing the uterus to stop hæmorrhage, he will do it with his fingers and it will not be half done, and if he uses instruments he will be very likely to stick them through the fundus of the uterus occasionally. It is a valuable measure perhaps, but must be used with circumspection.

Dr. Shimonek: I have had quite a number of cases in my practice. I have always succeeded very well in stopping hæmorrhage by massage, and stimulation of the uterus internally by the hand. I had one severe case among those, that very nearly bled to death, a case in the country that I was called in to see. The woman finally recovered. I found the uterus filled. I expressed the clots, contraction took place and the woman recovered. But I certainly should not advise the treatment proposed by Dr. French in regard to allowing the clots to remain in the uterus. I do not think that is very good treatment. I should not rely upon it. I do not know what effect the doctor got from the injection of strychnia and atropine, but it seems to me that it would be likely to produce more serious hæmorrhage from increasing the circulation. As soon as I can I always inject ergotin hypodermically.

Dr. French: In respect to the injection of strychnine and atropine, that was some hours after the hæmorrhage had ceased, and also the use of the whiskey was at the same time. This woman was in a state of collapse, and it was a great question as to whether she was going to pull through from one minute to another. Her extremities were cold. She was ice cold all over, and although the hæmorrhage had stopped, still with the pulse missing a beat about once every third beat, and when I could not tell whether the pulse was in her wrist or in my fingers, it seemed to me that it was necessary to use some stimulants to keep the action of the heart up. I readily agree with Dr. Burgess in the matter of the use of stimulants under the fainting condition where the hæmorrhage is in its active period; but there is another point to be considered in that respect; that although the whiskey may produce an increased action of the circulation, there comes a question as to whether it will not also stimulate the worn out condition of the uterine muscles. I well remember an incident related by old Dr. Buckingham, the professor of obstetrics, where he gave a woman ten teaspoonfuls of laudanum and produced a contraction of the uterus immediately, or within a very short time. I would like to ask Dr. Puls how long he would keep the gauze in?

Dr. Puls: Twenty-four hours, if necessary.

Dr. French: As I say, I see that the gentlemen would not agree with me in this method of treating this case. As I said in my paper, it was directly contrary to rules I had followed in other cases, but it seemed to me that this case was one that it seemed necessary to treat in this way if it would not yield to other methods of treatment. Dr. Copeland has spoken about sending for assistance. When you get caught in a case of this kind, unless assistance is next door or around the corner, it is pretty difficult to get the assistance there to help you.

THE INFLUENCE OF BODILY EXERCISES UPON LENGTH OF LIFE.

Read at the Annual Meeting of the Association for the Advancement of Physical Education, April 12, 1892.

BY J. MADISON TAYLOR, A.M., M.D.,
OF PHILADELPHIA.

It is not possible to estimate statistically just how much length of days is enhanced by physical exercises, but it is feasible to establish two propositions: (1) That judicious activities of the body tend to maintain and increase its efficiency, and (2) That the hurtful effects of violent athletic competitions are popularly overrated.

It would be most agreeable to me to consider the first of these, and drawing from history and experience, illustrate amply what few will be disposed to deny. Concerning the second there may be differences of opinion, and here it is well to apply the test of carefully marshalled facts and suffer inferences to evolve themselves. I hope to escape the rôle of advocate, but propose reviewing such meagre data as I have been able as yet to collect, and deduce therefrom only warrantable conclusions. My study so far is most imperfect, but my hope is to elicit discussion and comment so that the truth may come ultimately forth. Within the coming year I shall hope for much light and added knowledge. I have reason to expect large additions to the data yet collected, and these may have a value of which you shall judge.[1]

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[1] Dr. Taylor will be gratified for any information connected with this subject.

Against the growing interest in athletic matters there are constantly urged objections to the effect that many perfectly healthy young men are injured beyond repair by strains and shocks to vital organs had in the course of training or competitive sports. Even among those who avow much confidence in the value of physicial exercise, yet many declare the pity of it, because such havoc is wrought thereby. Instances are cited, rather vaguely 'tis true, of fine fellows utterly wrecked by contests on land or water, lives cut short by overtasks at so-called sports.

If these accusations are soundly based, let us then, who should understand the kinds and degrees of their perils, be quick and persistent to sound warning notes. We, of the medical profession, are endowed with the grave responsibility of defining and pointing out dangers and urgently insisting on their avoidance here and elsewhere. In this direction lies our greatest privilege and duty. Insidious evils lie about our feet perpetually, toxines lurk in our very food and air and water. Mayhap certain of these are only relatively hurtful, but at least, it behooves us to teach youth how to avoid disease and attain to vigorous age; and one of the most valuable measures is to train the body to grow in best proportions. During this process of training the thrilling joy of sports and competitions naturally comes in to hurry and overcolor our judgment. The special inquiry as to what hurts may follow in the wake of these is only secondary to the first need of direction how best to train.

As showing how far even the best and wisest of medical teachers can err in opinion, let me cite as typical of what many say, the assertion of Dr. Benj. Ward Richardson, than whom few men stand higher, and deservedly, in the estimation of medical thinkers:

"I can scarcely overrate the dangers of these fierce competitive exercises which the world in general seems determined to applaud. The state of perfection arrived at is at best artificial and sustainable but for a brief period. The mode of life for perfection is itself incompatible beyond a limited time with the ordinary requirements and necessities of life. And when the artificial system of training ceases, the involuntary muscles, the heart especially, remain in strength out of all due proportion greater than the rest of the active moving parts of the organism." He goes on to say: "I venture to affirm there is not in England a trained professional athlete of the age of thirty-five who has been ten years at his calling who is not disabled."

Now this authoritative statement has swayed the judgment of thousands of thinking people, so powerful are *ex cathedra dicta*; and yet on the face of it, it is too over-sweepingly denunciative to be good argument. I have had these views on the damagement of the involuntary muscles quoted to me again and again, and knew not whence they came, till at last this vigorous passage caught my attention. Such states are indeed possible and from such causes do they come, in the laborious ranks of iron workers and those who put forth in long days excessive and continued muscular exertion. In this country we have not had many years of systematized amateur athletics from the records of which to judge. They began about 1868, and only slowly grew in scope.

It is beyond measure difficult to get at the facts relative to the present state of even these whose addresses I have been able to obtain, and the mere names are troublesome to get from college and other registers. Systematized records should be kept on the subject in the interest of vital statistics in all organizations even moderately equipped.

Among professional athletes the heaviest strains must come, as upon the output of most concentrated force alone comes to them honest reward. I have collected the brief histories of a score of these men now living, which at least illustrate how vigorous and sound such men may be, even long after the age limit which Dr. Richardson has chosen to put for them. To those names I can add many, and hope yet to collect more. It may be safely affirmed, however, in conclusion, that the judicious pursuit of bodily exercises either in the line of ordinary avocation, special duties or sport, tends greatly to maintain and enhance the vigor of both body and mind. Those who practice these steadily through life enjoy the best promise of adding to their years and usefulness as citizens. The vital powers of those who omit these activities through choice or compulsion are not so efficient, and to such the accidents of changed circumstances from their simple routine to arduous exertions are far less well endured.

Finally, the hurtfulness of severe muscular exertions short of profound exhaustion are not shown to be otherwise than temporary and recoverable; and lastly, upon investigation, dangers to internal organs and vital centres are comparatively rare. In short, I present brief histories of a few old athletes, now in good condition, with apologies to these gentlemen if by so doing I offend, though it seems to me they have every reason to be proud and thankful to the good power who equipped them so nobly; and further in the care which they have undoubtedly exercised to maintain this so well. My long-tried and valued friend, Professor George Goldie, sometime of Princeton College and now of New York, has given me these:

W. W., age 74; height, 5 feet 9 inches; weight 170 pounds. Rowed in sixty boat races between the years '39 and '60 when they rowed in Whitehall boats, taught gymnastics at the Y. M. C. A. until two years ago; now in business in New York, in perfect health; would pass for a well preserved man of sixty; lived a careful life always.

E. S., bareback rider and tumbler; age, 77; height 5 feet 5 inches; weight about 130 pounds. Retired from the circus in 1868 at the age of 56; was as active then as he had been at 30. Owns a quarry and lives on a farm in New Jersey; was living and in perfect health last winter. Not having heard of his death, presume he is still living. Lived until he was 56 the same as most circus men live, steady in his habits, worked very hard, and naturally could not be very careful in his eating, and often had a short allowance of sleep.

Professor V. S., age 70; height, 5 feet 7½ inches; weight, 140 pounds; taught boxing all his life. Is still teaching as efficiently as ever; his school is in New York; lived the same as the average man does.

W. W., age 58; height, 5 feet 8 inches; weight 150 pounds; still teaching gymnastics in his own gymnasium; in perfect health; lives as the average business man does.

Professor A., age 57; teaching gymnastics in Brooklyn, New York; height, 5 feet 9 inches; weight, 180 pounds; in perfect health, a careful liver.

Donald Dinnie, 58 years old; height, 6 feet 1 inch;

weight, 218 pounds; an all round athlete, is still wrestling, lifting and throwing weights; comparatively temperate in eating and drinking. I heard a year ago from a friend who saw him, that he was in good health; he is living in Australia.

N. A., 59 years old; height, 5 feet 11 inches; weight when 35 years of age, 190 pounds; an all round circus performer; retired seven or eight years ago; living in Worcester, Mass. The last time I heard from him he was in good health; lived a very irregular life.

There are dozens of old circus men over 50 years old living in retirement all over the country who are in good health. Most of them retire at that age; they are then too old to learn new feats, and as the business is continually progressing, young men take their places. As far as their general health goes, it is better than the average man's. Ord, whom I remember in my schoolboy days in Scotland, was 70 years old the last time I saw him perform. From his actions you would have taken him to be a young man.

Blondin, who must be over 60, is still in good health.

William, George, Alfred and Edward Hanlon, the best (in my opinion) all round gymnasts and acrobats that have been in this country, range from 50 to 60 years.

George Grassick, James Stewart, Laurie Robertson, men getting well on to 70, were well known Caledonian athletes forty years ago; they are all in good health.

Professor George Goldie, aged 52; height, 5 feet 8½ inches; weight, naked, 160; just as good a gymnast and acrobat as ever; for seven months of the year works longer hours and harder than he ever did; although has had some very severe falls, they have not affected his general health; today his health is perfect in every way; has always lived very temperately. Subject in his managing capacities to numberless severe mental strains, and worries this superadding to his physical wear and tear.

The Ward Brothers, professional oarsmen, are living and in good health; the youngest of them must be over 50.

Amateur athletics started in this country in '68, so of course there can't be any very old men among them. It is very hard to follow the lives of amateurs, as they give athletics up after a few years.

The most notable examples of amateurs are W. B. Curtis, age 55; height, 5 feet 9½; weight, 175; in excellent health, though he is confined to an office all day. In '68 I saw him lift 3,230 pounds in harness, curl and put up easily two 100 pound bells, run 100 yards in 10⅗ seconds. For three or four years he, along with Yates, held the double scull championship; when over 40 years of age he held the championship at hammer and 56 pounds weight throwing. Today he thinks nothing of taking a 40 mile tramp, making four miles an hour all through the walk; very temperate in his habits.

H. E., aged 53; height, 6 feet; weight, 210 pounds; was 100 yards runner, the best in his day; shot putter, weight lifter, heavy weight amateur champion boxer; could today, in my opinion, beat any amateur boxer in the country; his spare time now he devotes to bicycle riding, rowing, swimming, skating, etc. His wife accompanies him in all his excursions; she can hold her own with all these with the best men in the country, I don't mean at racing, but long distances that require endurance; she is well on in middle life. B., is in business in New York, in perfect health; his mode of living is the same as the average business man's; athletics he has followed only as a recreation.

I add to these the following note from a recent copy of the *London Lancet:*

Major Knox Holmes, a veteran cyclist of England in his 83 year, one of a tandem military bicycling team on a trip of 100 miles in 10 hours 5 minutes, came in ahead of the rest. In twelve weeks under training in a striking manner "developed muscle" in external and internal vasti and rectus muscles. This refutes physiological doctrine that muscle is not newly developed after three score and ten.

I myself took sparring lessons from Mr. Thomas Barrett at the age of seventy-two, a famous all round athlete and prize fighter, and withal a charming person. He then could hold his own against most comers, and with us youngsters could play as with children. I lastly give, with his permission, a brief outline of the life of that marvelously vigorous gentleman, Mr. Wm. B. Curtis, and esteem it a great privilege to be allowed to do so.

SKETCH OF THE LIFE OF WILLIAM B. CURTIS.

William B. Curtis stands prominent in American athletics to a degree which is entirely unique. His athletic history is in itself almost a liberal education in such forms of physical feats as are performed by what is technically known as a heavy weight athlete. Added to this are some remarkable records of lighter kinds. He has been so good as to put into my hands a bare outline of his history, to which I have been able to add such comments as seem to me only just. His own modesty forbids him to do more than give me the actual records of feats which today stand unbroken, many of them scarcely approached. His best performances were:

Running	50 yards		5¾	Seconds
Running	60 "		6½	"
Running	75 "		8	"
Running	100 "		10	"
Running	220 "		23	"
Running	440 "		51½	"
Walking 1 mile,		8 Minutes	51	"
120 yard hurdle race			19	"
Skating, 1 mile,		3 "	18	"
Swimming 100 yards,		1 "	40	"
Swimming 200 "		3 "	39	"
Rowing, single sculls,	1 mile	6 "	49	"
Rowing, single sculls,	2 "	13 "	57	"
Rowing, single sculls,	3 "	23 "	13	"
Rowing, double sculls,	1 "	6 "	9	"
Rowing, double sculls,	2 "	12 "	23	"
Rowing, pair-oared	3 "	22 "	48	"
Rowing, four-oared	3 "	18 "	18	"
Rowing, six-oared	1 "	5 "	38	"
Running long jump,			19 feet 4 inches	
Running high jump,			5 " 1 "	
Throwing hammer,			90 "	
Throwing 56 pound weight			24 "	
Putting up one dumb-bell,			168	pounds
Putting up two "			Each 100	"
Lifting with hands alone			1323	"
Lifting with harness			3239	"

Mr. Curtis tells me that his father was a poor New England farmer's boy. The son worked upon the farm in various capacities until the age of 24. He then, alternately laboring and studying, worked his way through Middlebury college and Princeton Seminary, then became a Home Missionary, and finally President of Knox College, Galesburg, Ill. His mother was a New England farmer's daughter, accustomed from childhood to aid in all the work of the house and garden. The father was a man five feet eight inches in height, broad shouldered and active, but was never possessed of more than average strength and entirely uninterested in all matters of sport. His mother died when her son, who became the remarkable athlete, was but two years of age. She is described as a woman of queenly presence, magnificent in form and beautiful in face, but her death appears to have been due undoubtedly to phthisis. In a general review of his family history, Mr. Curtis attributes much of his own vigor, and rightly perhaps, to the fact that all his ancestors were temperate, hard-working people, entirely ignorant of the vice of excesses, and all living and dying in the country. There is nothing peculiar in the ancestral tendencies except that they had all died, so far as he knew, with few exceptions, of consumption. This is rather remarkable, however, as showing how this deadliest of human tendencies can be thrust into complete abeyance or stamped out.

W. B. Curtis was born January 17, 1837, the eldest of a family of fourteen, with one own brother and twelve brothers and sisters by a step-mother, who died in her thirty-fourth year, also of consumption. Of the children, but two step-brothers beside himself survived. The first eleven years of his life were spent at home, then two at Burr Seminary, three at Wabash Collge and one at Bell's Commercial College in Chicago. After leaving college he assisted his father for a year in newspaper work, then acted as bookkeeper and subsequently as cashier until the breaking out of the war. He thereupon enlisted as a private, but soon became captain and A. A. G., and served on staff duty until after peace was concluded. Returning to Chicago he was made a member of the Board of Trade, also the New York Gold Room; removed to New York in 1866, but returned to Chicago in '69, and again to New York in '78. The Chicago fire of October, 1871, causing the ruin of so many financially, numbered him among her victims and left him some thousands of dollars worse than nothing. After a struggle of six years and a half to regain his former business standing, which had been in the line of athletic teaching, etc., he gave up the fight and accepted his present salaried position on a paper in New York, where he has remained ever since.

Up to the year 1871, I learn that he always looked noticeably younger than his years, was frequently challenged and made to swear to his age when attempting to vote, as late as his twenty-eighth year; but the hard struggle with fortune after the Chicago fire aged him considerably, and made him look rather older than his years. He undoubtedly was what might be considered a very handsome man. My personal recollections of him go back quite twenty years, and I remember that he struck me then as having unusual clearness of eye and complexion, though always a little pale, and that the shape of his features was massive and handsomely strong. In his clothes he strikes one as being not a large man and rather stooped. This comes, however, of the immense size of the muscles of his shoulders and chest and a tendency not to stand as straight as he might.

While at school and college he was active in boyish games,—swimming, rowing, sailing, jumping, wrestling, running, playing at ball, and such like. He did not then especially distinguish himself. At twenty years he joined a boat club and rowed several races, but not liking the sport, gave it up. At about this time a gymnasium was opened in Chicago and he became a member. It was the distinct impression of his parents and their family physician that the relentless hand of consumption had marked him for its own; and therefore they rather encouraged his tendency to exercise, thinking that it might possibly prove useful, and if, peradventure, the measure should act in the opposite way and kill him, they resignedly looked upon it as but a slight anticipation of the inevitable. However, in this gymnasium he soon became astonishingly expert, early proving himself the equal of any professional, and while still very young made the extraordinary record, which still stands unbroken, of putting up two one hundred pound dumb-bells at the same time, one in each hand. During this time also he discovered quite accidentally that he was a very swift runner for short distances. In 1859 he made a series of careful experiments with the then professional champion of America who was training at Chicago for an important race, and found that he could outstrip him in any kind of a start; could beat two or three feet in fifty yards, ran a dead heat at seventy-five, and that this professional could beat him from four to six feet in one hundred yards dash, beyond this point he falling still further behind, at two hundred by twenty-five or thirty feet in the rear, and at a quarter of a mile, by fifty or sixty yards. From then on until 1876, he ran against every amateur he could find at all distances up to two hundred yards, and was never beaten until that year, at which time he was thirty-nine years of age, and at least nine years beyond the age at which sprinters are supposed to retain their fastest form.

During the war he was a mounted officer, riding an average of thirty miles a day for four years, and became so sick of the saddle that he has utterly eschewed it ever since. After the war his life was constantly that of a gymnast until 1868, when some of his associates in New York City coaxed him into a boat to supply the place of a friend who had met with an accident. He rowed this race and many others, largely at their solicitation, for this sport really never interested him, yet continuing thus for quite ten years. In 1868 he became one of the founders of the New York Athletic Club, and ever since has dabbled in various sorts of athletic games. To exhibit his marvellous versatility, it is interesting to glance over his gymnastic prowess, taking prizes and making phenomenal records on the parallel bars, horizontal bar, rings, trapeze and at leaping, at putting up one and two dumb-bell, at lifting with hands and with harness; in open air sports at running at the fifty, sixty, seventy-five, one hundred, two hundred and twenty and four hundred and forty yards, at a one mile walk, at one hundred and twenty yard hurdle race, at running long jump, at running high jump, at throwing the hammer and fifty-six pound weight. At the individual tug of war I believe he was never beaten. At skating one mile, at swimming one hundred and two hundred yards, at single sculls, double sculls, pair oared and four oared, and six oared boat races, he almost always succeeded in bearing off the prize. At about half of these various games he won championships at different times. Many of these performances were, when made, the best on record, and three still retain that honor, namely: at four oared rowing three miles with a turn, lifting with harness, and putting up two dumb-bells at once.

He says, "Almost everyone considers my weight-lifting with harness as the most noteworthy of my feats, but I do not. I pin to this sheet a memorandum which will explain to you how it was done. I have a natural talent for mechanics, and had, by constant experiment and alteration, adjusted my lifting harness so perfectly, and took such care in all my trials, that accident or injury was well-nigh impossible, and my apparatus was so skilfully adjusted as to give to my arms and back just what they could carry, while putting the whole load on my legs, which were Herculean in shape and strength. I am too small a man to be a lifter of the heaviest weight, and this distinction is due not so much to my strength, as to my methods and my mechanical skill. I have seen a dozen men who could have learned in two years to lift 3239 pounds, with my apparatus adjusted to their size and shape, but never saw two who seemed to be able to learn to put up two 100 pound dumb-bells. My adjustable dumb-bells, and all my lifting belts, tables, weights and other gymnastic apparatus were destroyed in the Chicago Fire of 1871. I have never replaced them, and have never since practiced gymnastic exercises or lifting, either for pleasure or with a view to competition."

It is interesting to study with some care the physical history of a man who has been through such extraordinary strains and vicissitudes. He seems never to have had any infantile disease. At ten years of age he injured his knee-cap, which left the joint stiff for three months; at college had chills and fever. In 1860, while practicing the feat of shouldering a barrel of flour and transferring it from one shoulder to the other, he dropped the object, standing with his right leg somewhat flexed and directly under him and the left leg sticking out to the side and straight, which was broken, as he described it, "downwards and inwards." From this there appears to have been no permanent damage. In 1862, while in the army, he had the measles, and since there was nothing else to do, he kept in the saddle and in the rain for three or four days and nights, finally gave out, and was left at a wayside cabin, without food except the native hog and hominy, and without doctors or medicine. The outcome of this was typhoid fever, a hospital cot for several weeks and pretty profound exhaustion for two or three months. This appears to have been his last day in bed from accident or sickness up to the present time.

In 1867, in New York City, while trying to stop a runaway team, he wrenched his left leg and lamed his bad knee. To use his own words. "It seemed to me as if I had ruptured some of the fibres which guarded the joint, and that the synovial fluid was escaping in small quantities. Probably I was mistaken, as it eventually healed and wholly, but I could feel what the doctors could not see, and the joint seemed dry and would creak, and needed oiling. I consulted Dr. Carnochan, also Dr. Peters, and got a little comfort. They assured me that it might be a good enough family leg, but would never be able for athletic duty again. They swathed me in rubber bandages from toe to thigh, and rubber knee cap with compress where the lesion seemed to be, and I wore this for two years to my extreme discomfort. In 1882 I wore this while competing in hammer throwing, shot putting, tug of war, etc., and am far from sure that it did me any good. Since after this injury I won the championship of America in running, rowing, hammer-throwing, fifty-six pound weight throwing, tug of war, and lifted over three thousand pounds one hundred times, the knee seems to have done pretty good service despite its condemned condition. It still has, however, the ungentlemanly habit of telling me when the barometer falls."

In 1886, while skating, his left foot went down into an eel hole, while his right and forward foot kept on in front of him until "I was split down like a circus contortionist. The boys hauled me on a hand sled to a house, thence on a load of hay to the railroad. Medical examination showed a rupture of some of the fibres of tendon and muscle at the upper part of the thigh. Two months with a cane, however, brought me round all right." Eight months later he fell out of an apple tree and smashed his right shoulder, "breaking off, I believe, a little piece of the shoulder blade. I lived for two months with my arm strapped to my body under my shirt, but it finally got well, and has not since bothered me in any way."

He describes having suffered more or less for thirty years with a mild nasal catarrh, and having tried pretty much everything for its cure, but finally abandoned all and is none the worse for it. He never has taken cold in chest or lungs. "Whenever I take cold it goes to my head, and I blow it out of my nose in a few days." He announces with some satisfaction that he never takes any medicine, doesn't even use liniment for his sprains and bruises, but only cold water. He has never had rheumatism. Being slightly myopic, Mr. Curtis remarks with some satisfaction that his eye sight is as clear now in reading as ever. As to the use of tobacco, he made some early attempts at smoking, but since the weed gave him unusual horror, he has never practiced it, and confines his use of it "to what smoke ill-mannerly fellows puff into my face on the occasions which I cannot prevent."

After reviewing the rules by which Mr. Curtis has been guided in caring, either intentionally or unintentionally for his health, one is struck by certain extraordinary incongruities. His habit of living is very simple, and just about such as one might assume would be the choice for a man of active temperament, but as touching his diet, he has most extraordinarily unwholesome tastes, as he frankly admits. I add in his own language his views on his slow decadence of youthful vigor—a very fair estimate, too:

"My last boat-race was at the Watkins Regatta, in the spring of 1878, and my last public athletic competition at the championship meeting, in the fall of 1882. Since then I have taken no exercise, athletic, aquatic or gymnastic, for exercise, or with a view to improvement or proficiency, but only for amusement. I think my average falling-off in ability, from my best days, must be about 20 per cent. In some things it may be more, and in some is certainly less. In running it is all of 25 per cent. 100 yards, formerly in 10 seconds, would now need at least 12½ seconds, and the quarter-mile, formerly 51½ seconds, would now need 1 minute 5 seconds. In dumb-bells about the same as in running. I have at my summer home a pair of 75 lbs., and sometimes manipulate them for the edification of curious friends. Last year I tried them twice, and found it exceedingly difficult to do with them what I used to do quite easily with the pair of 100 lbs. each. In rowing, hammer, 56 lb. weight, hurdling, skating and jumping, I think the deterioration is rather less than in running and with dumb-bells. The distance which I used, at my best, to swim in 1 minute, 40 seconds, I can and did, last summer, cover in 1 minute 52½ seconds. On the streets, with hands down, I used to walk 5 miles in the hour, now 4½ miles keeps me busy. On a track, stripped, and with hands up, I used to walk six miles in the hour, but do not now think I could do more than 5 miles."

1504 Pine St., Philadelphia.

METHYL VIOLET AND BLUE.

Read before the Ohio State Medical Society, Cincinnati, May 6, 1892.

BY JAMES T. WHITTAKER, M.D.,
OF CINCINNATI, O.

As I am able in the short time allotted to each paper to present but part of my subject, I will ask permission to read a short *résumé* of the observations made by others, and then report my own cases in what time is left.

The first general knowledge of the aniline preparations came to us through the studies of the bacteriologists. As is now well known, the tubercle bacillus was discovered and declared by Koch in 1882 with the aid of methylene blue. The next reference was the claim by Kremiansky, 1888, to destroy this bacillus by causing patients to inhale this coloring matter. Then J. Stilling, Professor of the University of Strasburg, 1890, made the discovery that certain aniline dyes exercise a destructive effect upon bacteria in the living organism, and especially upon *suppurating surfaces*, hence he gave one of them the name pyoktanin, from πυον, pus, and κτεινω, I destroy.

Pyoktanin not only excludes noxious matter from the wound, he says, but destroys it in the wound and thus heals wounds and ulcers. It is entirely innocuous and odorless, but colors tissues profoundly, a point of value to the physician, as it gives him control of the region of application. The color is easily removed by the spirit of soap. It is used in the following forms: Powder 2 per cent., ointment, pencils, pastilles for the preparation of solutions; bandage 1 per cent., of gauze, cotton, silk.

The author issued a second edition of his first report in the same year. Antiseptics hitherto in use, he said, not only destroy bacteria, but also injure tissues to such a degree that a number of surgeons had abandoned them altogether, and were content with simple cleanliness with the use of heat and sterilized water. The botanists have long been acquainted with the fact that bacteria, bacilli and cocci of every kind are destroyed so soon as a membrane is thoroughly permeated by the diffusion of aniline dyes and intense coloration of protoplasm. Anthrax bacilli, pus microörganisms, etc., absorb these colors like a sponge. Bacteria are found to be colored before the coloring fluid can be seen in the field of vision. With intense coloration, movement ceases; the cell perishes. To determine whether these things which can be so easily recognized in cultures and upon the object glass may be seen also in the living organism, was the question which the author set himself to solve. Stilling engaged with him in his work J. Worthman. They discovered that the violet aniline colors were the most practicable. Other dyes, fuchsin, methyl blue, vesuvine, were less valuable. Methyl violet excelled all the colors, but had to be abandoned at first on account of its impurities with arsenic. In experiments upon animals, it was found that methyl violet introduced into the conjunctival sac, colored everything profoundly, and imparted with its deposit a metallic lustre to the conjunctiva and cornea. The epithelium desquamated in great masses in a few days, and showed under the microscope marked fatty degeneration, almost the picture of the phosphorous kidney. But these masses, together with the whole conjunctival sac, were free of bacteria.

Methyl violet in man causes dilatation of the pupils without paralysis of accommodation. Introduced in strong solutions, 1–1000, into the eye, it colors the sclerotic and conjunctiva intensely. The iris is markedly colored. Strange to say, it traverses the normal cornea without sensibly coloring it. But if the epithelium be broken, however slightly, the cornea is colored intensely. By the next day nothing of the color is to be seen. Great quantities can be injected subcutaneously in the rabbit and guinea pig; as much as 20 ccm. of a 1–1000 solution without injury. But great quantities introduced into the peritoneal cavity quickly produce death. Examination post-mortem shows the whole contents of the abdomen intensely colored blue. The blood keeps its normal color, and strange to say again the blood-vessels, even of the colored abdominal organs, remain entirely free. Of serous exudation or even of inflammation, there is no trace. Death follows probably in consequence of coloration and therewith paralysis of important nerve centres. All this of course concerning chemically pure aniline colors.

Theoretically, the author has found that a hypopyon *keratitis* in rabbits, artificially produced by inoculation with the staphylococcus pyogenes aureus, was quickly jugulated with the instillation of a few drops of methyl violet solution. Not only the surface of the ulcer, but also the pus floccules in the anterior chamber were colored. Scrofulous corneal ulcers which had hitherto defied all treatment were seen to heal under it by the instillation of a few drops or by sterilization by means of the aniline pencil. Similar results were obtained in *blepharitis, conjunctivitis, phlyctenulæ and eczema of the lids.* Quite as remarkable were the results obtained in parenchymatous keratitis, serous iritis, and even in internal diseases, disseminated choroiditis, sympathetic ophthalmia.

The same effects were observed in surgical cases, as in *suppurating inflammations*, in the bed of the finger-nails, panaritium, burns, etc. The authors soon reached the conclusion that suppurative wounds and ulcers treated with aniline colors are certainly sterilized, provided only the dye be made everywhere to reach the pus. An old man of 70 had on the whole of the left leg a profusely suppurating *varicose ulcer* which refused to heal. After thorough sterilization with the aniline dye, it healed in a few days. The authors extended their observation to the field of antisepsis in gynecology and obstetrics. Methyl violet solutions of 1–1000 to 1–2000 suffice for the sterilization of instruments. Wounds are washed with solutions of 1–2000 to 1–1000; sewing silks, cotton and gauze are impregnated with 1–1000. Stitch abscesses are impossible under this *régimé*. Florid suppurating processes must be subjected to appropriate technique by insertion of solid masses with pencils, powder, etc.

The authors take a bird's eye view of the possibility of therapy in infections which do not depend upon the bacteria of pus, and intimated that remarkable results are to be accomplished in syphilis and many diseases of the skin. They had, they declare, very satisfactory results in the treatment of ulcers.

The aniline dyes with which the authors experimented were prepared by Merck, of Darmstadt, and offered under the names pyoktanine cæruleum and aureum. The latter of course is not a violet, but a yellow aniline dye, which is especially appropriate in diseases of the eye.

These remarkable statements were not allowed to go long unchallenged. Carl, of Frankfort, found that in the lighter forms of conjunctival catarrh and the milder cases of blenorrhœa neonatorum and scrofulous conjunctivitis, methyl violet had about the same virtue as a weak solution of boric acid. In granulations it was necessary to appeal to caustics.

As to affections of the cornea, the author never got any jugulation by methyl violet. In one case circular abscesses with subsequent dissolution of the cornea occurred. Whether or not it was due to the methyl violet, it was impossible to say, but it impressed upon the author the necessity of caution in its use.

Braunschweig, of Graefe's clinic in Halle, treated seventy cases with pyoktanin. In one case of perforation injury, it seemed that the remedy, if it did not prevent, at least retarded a beginning panophthalmia. All the other cases were hardly much benefited by the use of it. All the corneal ulcers cauterized and later subjected to paracentesis showed as good a result as with aniline, and in a much shorter time. The author therefore could not agree with the claim of Stilling that methyl violet surpasses all other remedies hitherto in use in the treatment of corneal ulcers. In a certain series of cases, it seemed to exercise a direct injurious effect. A small tubercle on the hand of a servant in the anatomical room touched twice energetically with the methyl pencil, so far from curing the affection developed a fresh lymphangitis, which brought the patient to the surgical clinic.

Lainati and Denti found the remarkable claim of Stilling established in only one of all the cases in which they used the remedy.

Next, Jaenicke published the result of his bacteriological studies, showing the effect of methyl violet and auramine on pure cultures of the staphylococcus pyogenes aureus, streptococcus pyogenes, bacillus anthracis, typhus and cholera bacilli. The most successfully treated of all the microörganisms was the staphylococcus aureus, whose growth in bouillon was entirely checked with a solution of methyl violet as weak as 1–2,000,000. Then followed the anthrax bacillus, streptococcus, cholera bacillus. The typhus bacillus continued to grow at 1–5000, a concentration followed by deposit of the coloring matter. Cultures on blood serum required much higher concentrations, but the relative resistance of individual bacteria was the same as that in bouillon cultures.

The efficacy of the yellow coloring matter, auramine, was much less. As to the destructive effect upon bacteria, it was shown that the staphylococcus pyogenes aureus was destroyed with the solution of 1–1000 in half a minute.

Concerning toxic effects, rabbits endured the subcutaneous use of a solution 1–1000, if the amount of coloring matter introduced stood in relation to the weight of the animal as 1 to 35—to 50,000. But the injections of much weaker solutions in still smaller quantities into the peritoneal sac causes death almost without exception.

Schubert reports that while pyoktanin was of no value in two cases of keratitis, it is of very decided value in those contused wounds of the fingers and toes, which occurred in stone workers. The patients came direct from their work with dirty hands and feet. No water was applied purposely, but the wound surface and the whole members, fingers and toes, were penciled with solutions 1:500–1000. The crushed parts were restored to their position, not united by ligatures but simply retained by a bandage of iodoform gauze, and over it was run a cotton and a starch bandage. By the next day the wound showed a beautiful rosy color and no sign of inflammation. The treatment was repeated. On the next day a union had taken place. A simple zinc salve finished the treatment in a short time, five days. A superficial panaritium in one of the same patients was healed with a single brushing with a pyoktanin solution. Schubert says he was led to use the remedy in this way by the belief that the bacteria had not penetrated to the depths of the tissue, and that if they could be thoroughly reached at once, they would be deprived of any possibility of injury; and so it turned out. The wound showed, as stated, on the very next day a fine, fresh rose color without the slightest sign of irritation. With the exception of some burning there was no pain after the penciling. The author recommends the use of the brush with the stronger solution 1:500–1000.

On the other hand, again, Garrè and Troja, of Tubingen, found the remedy of not the slightest value in suppurative wounds aud ulcers, in panaritium ulcers of the leg and phlegmonous inflammations. According to the bacteriological investigations of Troje, pyoktanin does inhibit the development, but even after twelve hours, does not certainly destroy the microörganisms of pus.

Peterson, of St. Petersburg, treated forty-eight patients with the pyoktanin pencil or solution. Twenty were cases of ulcus molle, eight ulcus durum, the remaining twenty were cases of ozæna, ulcera gummosa, keratitis, and a few small incised wounds. A 1 per cent. solution in a case of *ozæna syphilitica* destroyed the odor at once and cleansed the ulcer in the course of three to four days. Favorable results were observed in all the other cases, so that the author comes to the following conclusion: Pyoktanin used in pencil or powder 2–1000, talc and solution 1:1–100–2000, certainly acts as an antimycotic in infected as well as in non-infected wound surfaces, and ulcers. It is as good as iodoform, and has the advantage of lack of odor. It shows the same virtues in cases of ulcus molle and gummatous ulcers as in cases of disease of the eye. Complications or toxic effects of any kind were not observed.

Since his first report, the author in hundreds of successive cases of ulcus molle has abandoned the use of iodoform altogether for that of pyoktanin. The same good effects were obtained in cases of urethritis after injections of 1:1000–1:100. But the preparation is to be used with care because it discolors linen. The timely touch of dilute hydrochloric acid will remove the spots from the hands and wash.

Kessler, of New York, used the remedy in forty-two cases with remarkable results. One case of a *syphi-*

litic ulceration of the head which had withstood all treatment for two months ceased to suppurate at once after drainage and the use of a strong solution. Another case of bad *decubitus* in a paralyzed man, which a number of physicians had tried in vain to heal, stopped suppurating in twenty-four hours after the use of pyoktanin in substance, and showed every prospect at the time of report of covering the surface with healthy granulations.

Fessler, of Munich, covers in recent wounds of the head with a solution of 1–10,000 and a layer of hydrophilic gauze moistened in the same solution. Healing occurs in a few days without any reaction. The same results were obtained in a more extensive injury to the head which reached down to the bones. Bacteriological experiments showed that antimycotic properties are obtained only with a somewhat stronger concentration. The author found a solution of 1–1000 most useful. Wounds show very quickly after the use of methyl violet a fresh, red appearance, while the inflammation speedily subsides.

Kanne used a pure preparation free of arsenic and phenol in the treatment of *acute gonorrhœa*. The discharge was diminished one-half after the very first injection. The second injection reduced it to a minimum and the third stopped it altogether. The patient was thus cured in four days.

Mosetig–Moorhaf, of Vienna, reports on the use of the aniline dyes in *inoperable malignant neoplasms*. The results were obtained in sarcoma as well as in carcinoma, but better in the first than in the last. The subjective signs of improvement were diminution of pain, increase in the general health, elevation of spirits, improvement of the functions of the affected organs. Objective changes were shown in certain cases, sometimes earlier and sometimes later, in diminution of the size of the tumors. Sometimes the treatment failed in highly vascular and extremely rapidly growing, soft tumors, but even in these most refractory neoplasms there could be observed a temporary check, or at least a diminished advance of the growth. One of the remarkable observations in cases of ulcerative neoplasms was the general cicatrization of the whole surface, especially if methyl violet had been applied directly to the surface. The author observed as immediate effects after parenchymatous injections the following appearances, which however did not reveal themselves constantly: œdematous swelling of the injected parts and their vicinity without inflammatory reaction; the development of centres of softening; sometimes constitutional signs, chills and fever. In conclusion, it is repeatedly emphasized as a practical demonstration that certain cases, it may be exceptional cases. of malignant neoplasms, are caused to disappear under aniline therapy, and that neoplastic ulcers are brought to a state of cicatrization. As to recurrence, the remedy is too new for facts. Pyoktanin cæruleum is certainly indicated in all those cases of malignant neoplasms which, on account of neglect or previous operative failure, may not be addressed in other ways. The latest improvement in the remedy is the substitution of pyoktanin by carmine, *i. e.*, carmine 1.0–10 per cent., soda lye 1.5, distilled water 50.0. Mosetig maintains that the effect of carmine is more sure than that of pyoktanin. Cleveland, of Cincinnati, in a verbal report to the writer, uses carmine habitually in these cases.

Boas, of Berlin, comments on the report of Stilling and Worthman, and the various contradictory reports that have since been furnished. The investigations of Beck and Penzoldt with the staphylococcus aureus and milsbrand bacillus certainly demonstrate the inhibitive effect of aniline colors. Liebreich called attention to the fact that the violet dye, especially methyl violet, has such a various origin and different composition that results are uncontrollable. This fact may account for the diversities of individual observation. Braunschweig, as quoted, found opacities of the cornea and pseudo-croupous inflammations of the mucous membrane after their use. Mauthner makes a similar complaint. Rölloff had but little good to report from the polyclinic of Kolliker. They could see in no case a jugulation or a control of the process of suppuration. Patrezek reported bad results in the field of otology. On the other hand, Bresgen was more fortunate with diseases of the nose after caustics with the use of a solution of methyl violet 2–1000. The application of cotton dipped in such solution brought about a speedy cure. Kellerer reported a quick improvement in a case of croup with the appearance of stenosis, under inhalation of a solution of 5–2000. Scheimann recommended the remedy in tuberculous ulceration of the larynx and the nose. It has been used also in catarrh of the bladder and cervical catarrh. Subsequent communications vary in the same way: Peterson, though, supports the remedy. Wancher is very friendly to it in the field of ophthalmology. It is a remedy of extra virtue, he claims, in suppuration of the tear sac. Cholewa found pyoktanin valuable when strewed as powder in suppuration of the frontal sinus.

The reviewer quotes next Mosetig-Moorhof's observation in malignant neoplasms, notwithstanding the fact that Stilling had maintained that injections of aniline coloring matters into the circulation might not remain innocent. The best preparation for such purposes, Stilling maintains to be the pure hydrochlorate of hexæthylpararosanilin, which has been brought out by Merck under the name ethyl pyoktanin. Schleu recorded a case of cure of cancroid of the cheek by the use of pyoktanin in powder. In this connection also should be reported the case of Einhorn, of an inoperable carcinoma of the uterus which was much improved by an internal treatment with 0.2 methyl blue in fourteen days. The tumor became smaller and harder. Boas claims that he saw in a case of cancer of the stomach, after an injection of methyl violet 1–300, favorable effect upon the appetite and the general health. The tenderness of the tumor diminished, but the final exitus was not prevented by these injections. Billroth sees no good effect in cancer or sarcoma. It must be remembered that an absolutely chemically pure individual preparation is not yet in the market.

Based upon the observation that methyl blue exercises a particular effect upon the nervous system, Ehrlich and Leppmann employed the remedy in neuritic processes and in rheumatic affections of the muscles, joints and tendons. The analgesic effects occurred, without exception, in a few hours after the introduction of the remedy, and increased after appropriate dosage in the course of the following hours. until all pain disappeared. The appetite, digestion, pulse frequency, general strength, were not affected by the remedy. It was given either subcutaneously 0.02–0.08, or internally 0.1–0.5 in gelatine capsules.

The highest daily dose was 1 gram (15 grains). Lenne observed also in a case of carcinoma of the pylorus and liver, the analgesic effect of methyl blue 0.2 in capsule. Immerwahr had in six cases of sciatica no success, but in two cases of trigeminus neuralgia, the most surprising success. The remedy proved of great virtue also in three cases of angiospastic migraine. Cases of nervous headache and katzenjammer were quickly allayed by methyl blue 0.1. The same author observed favorable results also in muscle rheumatism and herpes zoster.

In his last communication, Stilling remarks that two years have now elapsed since the introduction of the aniline colors as antiseptics, during all of which time the remedies still hold their place. To the objection of Liebreich that pyoktanin is not a chemically pure body, it is urged that Merck has brought into the market a pyoktanin cæruleum which is at least free from all admixture with arsenic, phenol, sulphate of copper and chloride of zinc. This preparation is entirely innocent. No one except Braunschweig has ever seen any really injurious effects, and in his cases, the evil effects were due to the fact that he used a common commercial methyl violet, which Stilling long ago warned against as dangerous. The fact that the ophthalmologists got no bad results with their use of the pure preparation is the best proof of its innocence. Very recently chemists had prepared a blue pyoktanin which is a definite body, chemically pure, the so-called ethyl pyoktanin. Merck also had a crystallized pyoktanin, known as crystal violet, which is likewise absolutely chemically pure and constant. This substance, with methyl blue and malachite green, is better adapted for some purposes, because more easily soluble in common salt and less easily diffusible than methyl blue. In the treatment of wounds and ulcers, methyl blue is not so valuable as the more powerful antiseptic, pyoktanin, which has also the additional virtue that it remains longer upon the surface. On the other hand, for internal use, methyl blue is much to be preferred, because of its penetration. For the same reasons intestinal mycoses are best treated by pyoktanin, which remains upon the surface.

The author still maintains that the further use of pyoktanin has only confirmed him in his original opinion regarding the value of the remedy in checking suppuration. Gelpke, of Carlsruhe, got the most remarkable results in cases of corneal disease, where other methods had left the physician in despair. The difference of different observers depends upon a simple fact. In the lighter cases, where the surface is not sufficiently broken, the remedy does not penetrate to the depths as it does in the worst cases of broken ulcerated surfaces. The ophthalmologists, Meyer and Panas, accept the method, and confirm the results in cases of corneal ulcer.

Liebreich's detractions regarding the impurity of the preparations put a damper on experiments with the drug for some time. It made many investigators timid, and subsequent studies were very tentative. Now, however, that this objection has been nearly overcome, it is seen that we possess in these agents antimycotics that are singularly innocent to the tissues. All comparisons among disinfectants must start out with the solutions of sublimate which still surpass everything known. Corrosive sublimate destroys bacteria in general without spores in the proportion of 1:10,000, and with spores 1:1000. The pus microörganisms have no spores; neither does the diplococcus of pneumonia. The bacillus of typhoid fever, of diphtheria, of glanders, so far as is known form no spores; neither do the spirilla of cholera and relapsing fever. But though the dilute solutions of sublimate are strong enough to destroy these bacteria out of the body, they do not attack them in the body, because of the combinations they make with albumen, which weaken the sublimate or quickly decompose it. Thus the cholera spirillum is killed by sublimate in the proportion of 1:60,000, but in blood serum only by 1:1000 or 1:800. The typhoid bacillus in bouillon is killed by sublimate 1:10,000, but with 10 per cent. egg albumen the solution must be 1:1000.

Various methods have been devised to preserve the supreme power of sublimate in the presence of albumen, as by the addition of sodium or ammonium chloride, of hydrochloric acid, etc., and with such effect as to have largely met the difficulty, but nothing has been discovered which will make corrosive sublimate safe. So that the use of it, except as an outside aseptic and disinfectant, has been practically abandoned.

The aniline dyes do not unite with albumen. They make no compounds. They penetrate directly and entirely, sometimes so quickly as to disappear from the surface visibly.

According to Boen, bouillon cultures of pathogenic bacilli are sterilized by aniline violet in two hours in the following proportions:

Anthrax bacillus, 1:5000; diphtheria bacillus, 1:2000; typhoid bacillus, 1:200; cholera spirillum, 1:1000.

Malachite green is still more active, as it destroys anthrax bacillus, 1:40,000; diphtheria bacillus, 1:8000; glanders bacillus, 1:300; cholera spirillum, 1:5000.

In many regards these figures correspond to the potency of carbolic acid. Carbolic acid is much more stable and much less influenced by albumen than the mercuric chloride.

Bolton found that the addition of 10 per cent. of egg albumen to bouillon cultures of typhoid bacillus did not materially influence the result. This of the pure acid, of course. But much of the carbolic acid of commerce is not pure. The crude stuff contains only 25 per cent. phenol; that is, three-fourths of it is impure.

There is objection to carbolic acid in that in concentration it has caustic effect, and in quantity toxic effect. The anilines have no causticity whatever, and when pure no toxicity.

The only other agent with which the anilines might be compared is the old potass. permanganate, which the older practitioners remember was in fashion as a disinfectant in their earlier days. But the permanganate is farther behind in virtue than in time. According to Jaeger, it is very feeble. It fails to destroy the anthrax bacillus without spores in the proportion of 1:100. To produce this effect it must be present in fact in the proportion of 1:20. A percentage so great as 1:50, according to Sternberg, fails to attack the micrococcus of Pasteur in the blood of a rabbit.

The rapid diffusibility of the anilines would seem to put them in the first place as internal antimycotics. But there is of course no seem in science. They must be tried in individual diseases. In tuberculosis they made a flat fiasco. Kremiansky claimed to have wrought remarkable results, but the claim had no support other than temporary general improvement.

Bertalero afterwards published the cure of eight cases. Billings failed with two, and Seslaïm tried it faithfully and failed utterly. It is only fair to say, however, that the remedy was used in these cases by inhalation, which is a useless method of employing anything in tuberculosis, because the bacilli in the bronchi and in cavities and abscesses are already dead.

Guttmann and Ehrlich published their famous experiments with malaria in the *Berlin. Klin. Wochenschrift*, September 28, 1891. They demonstrated the disease by coloring the plasmodium from a drop of blood from the finger by the Italian method, *i. e.*, by treating the drop with a little human blood serum lightly tinged with methylene blue. They were led to use the drug therapeutically because of its property of penetrating to the corpuscles and coloring the nuclei of nucleated bodies. The result was very remarkable, to use with as little emphasis as possible this highly elastic and much abused term. Remarkable, as these authors said, because no combination of chemistry ever yet devised a drug which could produce any effect upon the parasites of this disease. The fever disappeared in the first few days, and the parasites disappeared from the blood at the end of the first week. They gave the remedy in doses of 2 grains in capsules five times a day, at first at intervals of three hours, and later, to anticipate a quotidian attack, every hour, five times. It was found necessary to continue the remedy in doses of 7 or 8 grains per day for eight or ten days, and in very severe cases a much longer time. The maximum dose ever administered was 10 grains. The only evil that ever followed was irritation of the bladder, frequent micturition and dysuria. This evil was easily obviated by the use of powdered nutmeg, the end of a case knife full several times a day, a remedy in old use in Munich in relief of irritation of the bladder after the ingestion of fresh beer. The oil of nutmeg does not answer so well. Grawitz failed in breaking up one severe case in which he afterwards succeeded with quinine, and in another case in which he could find no plasmodii in the blood.

During the last three months I have made use of solutions of methyl violet and blue in all the cases hitherto mentioned except the purely surgical cases. I made it a point to substitute it for every other antiseptic, disinfectant or antimycotic agent in the ordinary routine of office practice. I soon reached the conclusion that much stronger solutions than those mentioned could be borne not only with impunity but with benefit, and had the remedy prepared in the strength of 1–100. These were my standard solutions and are indicated, unless otherwise specified, in all the cases mentioned.

The mode of application was for the most part with a cotton-wrapped sound. I use the perfectly smooth, flat steel rod about the diameter of a uterine sound, very lightly indented with half a dozen notches on each side at the end. A strip of cotton is quickly turned about the rod with a twisting motion of the handle to the extent of 4 to 6 inches, that the index finger of the right hand may fix the end of the cotton and prevent its detachment on withdrawal from a cavity with close walls, as from the nose or cervix uteri. After withdrawal, the cotton is quickly stripped from the rod by the aid of a piece of fresh cotton between the finger and thumb, that the hands, especially the finger nails, may receive no stain. Sensitive surfaces are anæsthetized with cocaine, 4 per cent. solution, applied in the same way. The cocaine is used simply to blunt the sensation of pain produced by the cotton itself, not by the remedy, which when pure, as stated, excites no pain or other irritation. Any accidental staining of the fingers of the practitioner or the face of the patient may be quickly washed away.

In the throat the remedy is best applied by means of a ball of absorbent cotton with the laryngeal forceps. Simple catarrhal affections are subjected to a universal swabbing process with a large mass of cotton. Laryngeal lesions are addressed more directly with a mirror and a small pledget in the grasp of the laryngeal forceps. In extensive intra-laryngeal disease, syphilis, tuberculosis, I allow the fluid to be squeezed out in quantity, by the contraction of the larynx, from a larger mass of saturated cotton introduced into the larynx itself. The irritation thus experienced is not greater than that which follows the use of cocaine, and is all due not to the drug, but to the foreign body. The urethra is treated by means of injection, either by the catheter of Ultzmann in medication of the prostate and its urethra, or by the full-length catheter in the treatment of the bladder itself. The remedy is so quickly eliminated by the kidneys as often to medicate the bladder and urethra sufficiently by internal treatment.

Messrs. Fennell and Heister, druggists of this city, have been kind enough to prepare the specimens which I now present, to-wit: tablets and capsules of 1 and 2 grains of methyl violet and blue. The remedy is given preferably in capsule internally, to prevent staining of the mouth. I have here also a specimen of urine passed by a patient this morning after having taken a 2 grain capsule of methyl blue last night upon retiring. The urine is as blue as if colored by indigo. Patients thus treated will continue to pass urine colored in this way sometimes for twenty-four to forty-eight hours after cessation of the remedy. The secretion then passes through various shades of light blue and green before it reaches its natural color. It commonly happens that patients will then, after the lapse of several hours or even days, again pass colored urine, proof that the substance, however diffusible, remains confined for some time in certain parts of the kidney; illustration also of the fact that healthy urine may come from a diseased kidney, that is from sound parts of a diseased kidney, explaining the alternating presence and absence at times of albumen.

I present to the Society also the body of a rabbit, split open along its abdominal surface and everted. It will be seen that the abdominal organs, including the peritoneum, are stained various shades of blue from a light bluish gray, as best shown in the colon, to the deep blue of the extended peritoneum. This animal received one hour ago four hypodermatic syringefuls of a solution of methyl blue 1–500. The injections were made all subcutaneous only, the animal showing, between the time of the injections and the death by chloroform, no signs of distress whatever.

I have had no experience whatever with the use of the remedy in the eye or ear, but abundant experience in the nose. Catarrh of the nasal fossæ is the most common malady that presents itself in office practice. It is for the most part a trivial malady with associate mental distress out of all proportion to the lesion. Nasal catarrh is for the most part simply an objective and obtrusive excuse for complaint by idle and querulous people. Cure of the catarrh will not cure the patient but will remove the reproach from medicine to some domestic infelicity or other incapacity of this class. The application of methyl violet upon the cotton wrapped sound dries up the excessive secretions, relieves the sense of fullness and oppression of which these patients make such complaint. It is especially valuable after the use of the galvanic cautery, the use of which with the cheap apparatus recently devised, has become a universal fashion. The effect is not so good in the throat, as the remedy disappears so quickly from the surface. Methyl blue sinks into the mucous membrane like water in sand. Patients sometimes pass blue urine after a single treatment of the throat in this way. Methyl violet remains longer upon the surface and hence is better adapted to these cases. The moisture of excessive secretion disappears after the use of methyl violet to leave a surface more dry and glazed. Methyl violet is equally efficacious with the nitrate of silver and causes much less distress than the stronger solutions, one or two per cent. of nitrate of silver, which alone are of any value in pharyngeal catarrh. Both preparations give more relief in cases of laryngeal affection, especially in laryngeal tuberculosis, than any other remedy except cocaine, and the relief of cocaine is so transitory as to be of little value.

With the first publication of the experiments of Kremiansky I gave methyl blue thorough trial by inhalation, especially in the bronchitis of tuberculosis, and as stated for the reason we now understand, without effect. But upon the endometrium, methyl violet acts better than carbolic acid and has the advantage over it that it produces no subsequent desquamation with retention.

Catarrh of the bladder is a proper field for the use of the remedy. It may be introduced by injection as stated in the proportion of 1-1000, when it has about the value of a solution of the bichloride 1-20,000. It is a little harder to handle on account of its stain, but is always less irritating than the weakest solutions of the bi-chloride. Pyelitis, cystitis, prostatitis, are affections which call for the use of the remedy internally. Here it should be given in dose of 1 or 2 grains every two to six hours. So soon as it appears in the urine, it stops all decomposition and at once makes a foul urine perfectly sweet. It does not cause to disappear mucus and pus, epithelial or other debris, but prevents their fermentation, and prevents sepsis, due to this cause.

The most illustrative case in my practice in this particular, was that of a gentleman with ectrophy of the bladder. This individual suffered periodical attacks of fever, one of three months duration, more frequently of one and two months, resisting every kind of medication. The exposed wall of the bladder was covered with incrustations of urinary deposit, and notwithstanding every cleanliness under the constant supervision of a trained nurse, the urinous odor of the body was offensive. Under the use of capsules of methyl blue, 2 grains every two hours, the local condition changed at once, the fever subsided in three days, and the gentleman, a merchant, returned to his business within a week. Under the continued use of the remedy in dose of at least two grains three time a day, the patient has remained well ever since, that is over a period of three months. A relapse which followed a convivial indulgence was checked within twenty-four hours by a return to the original dose. There was no irritation of the bladder in this because there was no neck of the bladder to irritate.

I have had frequent occasion to use the remedy internally and subcutaneously in the treatment of vague neuralgic and rheumatic pains, but by no means always with the success usually reported. One case of nervous prostration following a debauch, katzenjammer, yielded in the course of a day to doses of one grain every three hours, whether post hoc or procter hoc. it was impossible to say. In ordinary neuralgic and muscular pains the remedy is not so useful as the salicylates. But there is one form of neuralgia, over which it seems to exercise sovereign control and that is the neuralgia due to malaria. It is a striking comment upon the disappearance of malaria in crowded cities, or upon the universally understood value of quinine, that well-marked examples of this disease become rarer every day. I have not had the opportunity in three months of seeing a single case of distinctly marked chill, fever, and sweat, of malarial fever. But masked malaria abounds and especially in the form of obstinate gastralgias. These are the cases which yield much more readily to methyl blue than to quinine or arsenic. In these cases the remedy must be given in connection with the powder of nutmeg, as the large dose necessary to secure effect, produces at times intense irritation of the bladder. One striking case, that of a lady affected with periodic gastralgia at night only, and then with such severity as to prevent sleep even under the use of anodynes, yielding only to maximum doses of quinia, which produced discomfort greater than the disease, was entirely relieved by the use of methyl blue, one grain every three hours at first, and later on three times a day.

One other case, that of a young man suffering also nocturnal pains, irradiating from the spinal cord, manifest chiefly at the right hypochondrium and epigastrium, defiant of electricity, morphia, arsenic, was not influenced in the least by the use of methyl blue. At a later examination, the case turned out to be a caries of the vertebræ.

But I wish rather to speak of principles than cases, and I may bring this report, already longer than I had anticipated, to a close with the claim that the aniline colors, on account of their innocence as well as their virtue—*primum non nocere*—have a field of usefulness already, and a promise of much more.

PREPARATION FOR THE STUDY OF MEDICINE.

Portion of a Doctorate Address of President

E. L. HOLMES, M.D.,

OF RUSH MEDICAL COLLEGE, CHICAGO.

Incomplete is a discussion on this subject that does not include a consideration of the great value of an elementary knowledge of Latin and Greek.

I here most seriously disclaim any attempt to prove that devotion to Latin and Greek for the purpose of reading the literature of these languages is either requisite or even desirable as a preparation for the study of medicine. The field of modern literature and of modern science has become so vast and important that the average student will find neither time nor relative profit in the attempt to *master* the ancient classics.

I *do, however, earnestly advocate the* rudiments—I mean simply the rudiments—of Latin and Greek, as most valuable labor-saving instruments in acquiring an English, a scientific and a medical education.

I ask indulgence if I dwell somewhat at length on this portion of my subject, for I think we are in danger of losing sight of the many and great benefits which every true student will receive from a judicious study of some things in these living dead languages. My argument turns on the word judicious, as applied to the extent and method of the study. The old methods, as unphilosophical as they well could be, and the undue time and labor devoted to the classics are worthy of radical change in the modern system of education.

Consider the vast array of technical terms and of common English words in our general and scientific literature, which are also pure Latin and Greek words. Look at this remarkable series of paradoxes! A young man may never have learned a single word of Latin or Greek, and yet under ordinary circumstances he has learned by hearing and reading English several hundred Latin and Greek words; if he is especially intelligent, at least three thousand. When he receives his degree of Doctor of Medicine, he has learned by the most painful toil several hundred technical terms taken from these languages, and still does not know a single word of Latin or Greek. He can count in Latin and Greek, and yet is in ignorant bliss of the fact, for he could not give on demand a single numeral of these languages. He already knows the names of several colors, of several of the elements, and yet cannot tell one of them. He knows the Latin and Greek names of every member of the body, of every organ, tissue, fiber and fluid, and of all their diseases, of all the senses and functions, and the words to express writing, describing and measuring. If, however, he was asked to give the Latin and Greek synonyms for any of them, he could not give it.

Now for the pith of what I have to say: A rudimentary Latin, as also a Greek, grammar with the readers should be constructed for the primary object of teaching English; secondarily, of teaching Latin and Greek.

The Latin grammar, save perhaps fifty connectives and other important words, should contain scarcely forty pages of declensions and conjugations, with only a very few rules. Every word of this grammar should be a good English word, with possibly a slight change of a letter or syllable.

The Latin reader should contain at least a hundred and fifty pages of pure, even elegant Latin from classic prose and from poetry, almost every word of which would be a good English word.

We will present a few examples:

"Labor omnia vincit."

"Poeta nascitur, non fit."

"facilis descensus Averno:
Noctes atquedies patet atri janua Ditis
Sed revocare gradum superasque evadere ad auras.
Hoc opus, hic labor est."

"Literae adulescentiam alunt, senectutem oblectant secundas res ornant, adversis perfugium ac solatium praebent, delectant domi, non impediunt foris, pernoctant nobiscum, peregrinantur, rusticantur."

"Homo sum, humani nihil a me alienum puto."

"Pallida Mors aequo pulsat pede pauperum taburnas Regumque turres."

These, of course, could be preceded by many simpler sentences, such as "Tempus fugit." "Res sacra est miser."

As the multiplication table must be committed to memory before the child can progress in arithmetic, so the few pages of declensions and conjugations must be memorized, that the beginner may become perfectly familiar with Latin terminations. With this preliminary exercise, the scholar would then find no perplexities, and would read almost at sight all the sentences in the reader.

In the vocabulary at the end of the reader with every principal word should be arranged all cognate words. With the definition of each word should be presented all English words derived from it.

Instead of exercises in transposing English into Latin, I would for the first year direct the energies of the pupil in the discipline of memorizing by easy tasks the classic sentences I have just described.

There seems to be a growing prejudice among educators of recent times against the practice of "learning by heart." I am convinced there is no way by which one can make more rapid progress in learning a language, either ancient or modern, than by committing to memory wisely selected sentences and phrases.

This is the natural method of learning a language. The child, from the time it attempts to utter its first syllable, never speaks that syllable perfectly till it has learned it by heart. In a single year the pupil will learn far more Latin than in two or three years by the methods usually pursued in our public schools.

The same plan should be pursued in teaching the elements of Greek. Thirty pages of grammar, each word of which should be an English word, except fifty connectives and other important words, would suffice.

There would be some difficulty in filling a Greek reader with gems of Greek, which would also be English. A competent Greek scholar, however, with the aid of fifty connective words not English, could compile a few such sentences, and paraphrase others. He could arrange simple narrative of facts from history, biography, geography and mythology, in which the several hundred Greek words in our language could be formed into quite long sentences, and convey much useful information.

Pardon me for reading a dry list of familiar syllables to call to your minds a multitude of Greek-English words which, properly arranged, would fill many pages of instructive reading—words ending in graph, gram, meter, logue, asm, scope, sis; words commencing with dia, a or an, kata, para, apo, hypo, hyper, hydro, phos, sym or syn, phil, peri, tech, tel; words in which the following are important syllables: hepat, soma, stoma, ptoma, tony, pneuma, deme, *crat, arch, bion, phon, tone, sarc.*

There is a great need of such elementary text-books for the use of professional students, the preparation of which is worthy the attention of any ingenious and thorough Latin and Greek scholar. As far as I am aware, those which have been heretofore arranged do not possess vocabularies sufficiently extensive for the use of the medical student in studying technical terms. The portion devoted to grammatical forms is also inadequate. Moreover, the quotations and other sentences are not selected with reference to their elegance of expression and beauty of sentiment, which render them suitable for memorizing; nor do they seem to be selected with special reference to the useful knowledge they convey.

The vocabulary should be sufficiently extensive to present not only all words used in our general literature, but also in the sciences. The following examples will illustrate my meaning:

Tango, tangere, tetigi, tactum (contingo, contingere, contigi)=To touch. Tactus=Sense of touch. Tangent, tangible, intangible, tact, intact, contact, contiguous, contiguity, contingent, contingency (integer, integral!).

σαρϰαζω=To tear flesh like dogs. Sarcasm, sarcastic.
σαρϰιζω=To flay. Sarcoma, sarcosis.
σαρϰινος=Fleshy. Sarcous, sarcocele.
σαρϰοφαγος=Flesh consuming. Anasarca.
σαρξ-ϰος=Flesh. Sarcophagus.
"*ϰαϰων πελαγος*"
ϰαϰος—Bad, evil. Cacodyle—cachectic, cacexy—cacoethes, cacophony.
πελαγος=The Sea. Archipelago.

After this study of English Latin and Greek, the student can understand without difficulty the technical terms of every science in every modern language. He is also able to trace the derivation and meaning of new terms which are constantly formed in every department of knowledge.

He possesses the key by which he can acquire two modern languages in the time otherwise required for one; he enjoys a deeper insight into the spirit of all literature; he has a systematic knowledge of sufficient Latin and Greek to enable him to continue alone his reading of the classics if he has the time and taste so to do; he has increased and perfected the vocabulary of his own language, which, in very great degree, is a measure of mental development, and which possesses an intrinsic value almost beyond estimation.

This course is relatively easy, since the pupil makes use, through every step, of a large vocabulary which he has in great measure already at his command. After he has once learned the inflections, he makes rapid progress in comprehending the simpler forms of construction. He soon recognizes at a glance important "stems" in English words, even when they are disguised, as in microbe and autobiography, in telescope and episcopal, and in chylopoetic and poetry.

A vast majority of pupils in our high schools drop their studies at the end of their second year. They have spent so much time in struggling with an absolutely strange vocabulary and idioms that they have learned very little English, and still less Latin and Greek. By the plan here advocated, they will have made progress in their own language and acquired considerable knowledge in the ancient languages—an excellent foundation for further study in any field. They will have stored their minds with many beautiful sentences, epigrams, mottoes, and gems of thought.

This course will not materially conflict with any method which a teacher may prefer.

(The whole address was intended for those who cannot pursue a collegiate course.)

BOOK REVIEWS.

Annual Report of the State Board of Health of New Hampshire. Concord, 1891.

The tenth annual report of this series covers the year ending October 31, 1891. It is an attractive volume of 270 pages, issued under the careful editorship of Dr. Irving A. Watson, secretary of the board. Mr. George E. Waring of Newport, R. I., gives an illustrated report on the sewerage of Laconia and Keene, showing how special difficulties in drainage were overcome. Dr. D. M. Currier has a paper on the heating and ventilation of the common schools, in that northerly section where an especial degree of attention is demanded in order to keep the air of the schools pure as well as warm in winter. This problem the writer believes to have been fairly well mastered in the use of what are called "jacketed stoves", such as have been in use in Massachusetts in late years. Diagrams are published with the article, fully explaining points in the construction of the apparatus, which seems to be inexpensive in view of the results accomplished by it. Dr. Currier fully commends the system to the attention of school authorities, and to the minds of the whole people, that no care is too laborious which makes the common school, as it has already been somewhat prophetically called, "the divinest thing on earth." The causes of death in the year 1890 are considered at some length. Consumption heads the list, and has a marked increase in the year, compared with the two previous years; this increase appears to be explicable on the score of the climatic or other unknown causes to which epidemic influenza was due. The death-rate from influenza, as recorded in New Hampshire, appears to have been much lower than in some of the more southerly States, whose statistics we have seen. Vaccination and disinfection are among the other subjects selected for discussion by members of the Board.

Varicocele and its Treatment, by G. Frank Lydston, M.D., Professor of the Surgical Diseases of the Genito-urinary Organs and Venereal Diseases in the Chicago College of Physicians and Surgeons, etc. Chicago :W. T. Keener.

The book opens with a pleasant dedication to the Southern Surgical and Gynecological Association. The contents include the definition and general consideration of varicocele, its etiology, the general and morbid anatomy of the subject, the symptomatology and complications and treatment. A very complete bibliograph of varicocele concludes the book. The etiology of varicocele is most ably discussed. Under this heading the author considers the relations of varicocele to modifications of the sexual function, and holds that the former is one of the causative factors of some forms of sexual perversion and of impotency. The author clearly shows the influence of varicocele in the production of hernia. The sections devoted to treatment constitute just half of the book, and the subject is well handled. The author discusses the various operations described, and gives an increased value to his report by relating his individual experience and the results of his own extensive practical acquaintance with the subject in hand. The book is a very complete monograph on the subject of varicocele, and is well written. The illustrations are well selected, and in the main well executed. The publisher's part has been performed in the best style of the printers' art. Those interested in the subject, will make no mistake in purchasing the book.

Manual of Chemistry. A text-book specially adapted for students of Medicine and Pharmacy. By W. Simon, Ph.D., M.D. Third edition. Thoroughly revised. Philadelphia: Lea Brothers & Co.

This work has been so well received by all medical educational institutions that it is a pleasure to note the publication of this new edition, which is a genuine object lesson from front to back, the illustrations are so very fine. The text is made to correspond with the most recent advances in this interesting and valuable study.

Outlines of Zoölogy. By J. Arthur Thompson, M.A., F.R.S.E., with thirty-two full-page illustrations. New York: D. Appleton & Co., 1892. For sale by A. C. McClurg & Co., Chicago. Price $3.

This excellent work is designed to serve as a manual for students either in the art's course in college, or in medical schools. The author is a teacher of repute, and has the happy faculty of telling others what he knows of a subject in hand, and in a pleasing way.

Eleventh Annual Report of the State Board of Health of Illinois, with an Appendix containing the Official Register of Physicians and Midwives, 1892.

The medical profession is quite familiar with the inestimable value of these reports, and in this issue is brought the medical, educational and sanitary work of the Board pretty well down to date.

Dyspepsia. This is a little manual of the Red Cross Series, by John DeWar, L.B.C.P.E., and intended for popular reading, and in which is found some directions in regard to diet that commend themselves to us as being based on sound reasoning.

The Mediterranean Shores of America; or, The Climatic, Physical and Meteorological Conditions of Southern California. By C. P. Remondino, M.D., member of the American Medical Association, of the American Public Health Association, of the State Board of Health of California; Vice-President of the California State Medical Society, and of the Southern California Medical Society. Illustrated with forty-five Engravings and two double-page Maps. In one handsome, royal octavo volume, 176 pages. Extra cloth, price, $1.25, net; cheaper edition, bound in paper, price, 75 cents, net. Philadelphia: The F. A. Davis Co., Publishers, 1231 Filbert street.

In this attractive little volume the author narrates in a very pleasing way the character of the climate of Southern California, and its influence upon the people of that land as affecting not only their health, but also their religion, arts, sciences and civilization; thus giving the reader a fund of information that is of very great value.

Therapeutics: Its Principles and Practice. By H. C. Wood, M.D., LL.D. Eighth edition. Rearranged, rewritten and enlarged. Philadelphia: J. B. Lippencott Co.

The rapid appearance of one after another edition of a text-book indicates the high regard in which it is held by professional teachers.

This work by Professor Wood is not an exception to this statement, for there is to-day no other work that is more generally popular. In this there is found a good reason in the author's thoroughness in his descriptions, and in his clear presentation of all that is definitely known of the subjects treated. So well is the work known that an exhaustive review is now entirely out of place.

Botany. A Concise Manual for Students of Medicine and Science, by Alex Johnstone, F. G. S., with one hundred and sixty-four illustrations. New York: D. Appleton & Co. 1891. For sale by A. C. McClurg & Co. Price $1.75.

This is a digest of notes put together in a way that is useful for immediate reference by the student, and as it is upon a subject too little taught to American medical students, this excellent little book should become a stimulant for more instruction in a direction in which every physician should have a good amount of practical information.

A. B. C. of Swedish Gymnastics. By Hartwig Nissen.

This is a hand-book written in the style of questions and answers and may be made of much practical use by teachers and parents. Physicians will find in it many valuable suggestions.

NECROLOGY.

Sir William Bowman.

Sir William Bowman, the veteran ophthalmic surgeon of Kings College, London, has died at the ripe age of seventy-five years. He was appointed assistant surgeon at that college in 1840; full surgeon in 1856. In 1852, the rising of modern ophthalmology incited him to devote himself to eye work, for which he was both physically and temperamentally fitted. He possessed a hand without tremor, with fingers shapely, slender and artist-like. His anatomical knowledge was that of an official demonstrator. He early familiarized himself with the ophthalmoscope, and championed the methods of Donders and von Graefe before the British societies. His position as an ophthalmic surgeon was for years one of unchallenged supremacy, not only on account of his manipulative skill, but of his diligence as a student, "the concrete results of which will ensure his name an immortality in the archives of ophthalmology." He was the recipient of numerous honors from scientific societies, both at home and abroad.

At the 232d regular meeting of the Gynecological Society of Boston, held May 12, 1892, it was unanimously resolved. on motion of Dr. W. S. Brown:

That this Society expresses its deep regret at the death of Dr. Henry I. Bowditch, an honorary member, who always manifested a warm interest in its welfare, often attended its meetings, and took part in its discussions.

That, in our opinion, the whole medical profession has sustained a severe loss in the death of Dr. Bowditch, whose intense love of truth, devotion to reform, and fearless expression of opinions did much to promote medical progress all over the world.

That a copy of these resolutions be sent to his family and also to The Journal of the American Medical Association.

Augustus P. Clarke, M.D., *President.*
Samuel N. Nelson, M.D., *Secretary.*

The Effects of Thymol upon the Urine when Given in Large Doses.—In five observations, Blum (*Annales des Maladies des Organes Genito-Urinaires*, April 1892), following the example of Bohland, has given thymol in doses of from three to five grams. In three of the cases diarrhœa was produced. In all of them the urine was constantly acid and charged with large quantities of the crystals of uric acid. On the addition of a few drops of hydrochloric acid a blue-green coloration was obtained, but it was evident that the coloring matter was not indigo. It was analogous to that found in the urine of persons that have been using phenic acid. In a case, not of this series, there were found in the urine thymohydrochinone, thymol in a pure state and an acid, the nature of which was not determined.

The Therapeutic Value of Suppuration.—Fochier has observed that in some cases of puerperal infection, when there is no important appreciable lesion, a sudden amelioration not rarely takes place coincidently with the appearance of a focus of suppuration in the iliac fossa, in the breast, in the subcutaneous cellular tissue, or about a joint. The thought suggested itself that in suitable cases the establishment of suppuration by the subcutaneous injection of essence of turpentine might be a rational procedure; and in a number of cases, successful results were by this means obtained. Governed by the same principle. Lepine and Dieulafoy each employed the injections in a desperate case of pneumonia, with a fortunate termination. About fifteen minims were injected in each situation selected. Suppuration took place in the course of a few days, but it was unattended with elevation of temperature, and the pus was aseptic.—*L' Union Médicale, No. 39, 1892, p. 465.*

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1271, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, JUNE 4, 1892.

BY-LAW IV.—THE PUBLICATION OF PAPERS AND REPORTS.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it shall be placed in the hands of the Board of Trustees on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Authors of papers are required to return their proofs within two weeks after their reception; otherwise they will be passed over and omitted from the volume.

Every paper received by this Association and ordered to be published, and all plates or other means of illustration, shall be considered the exclusive property of the Association, and shall be published and sold for the exclusive benefit of the Association.

The Board of Trustees shall have full discretionary power to omit from the published *Transactions*, in part or in whole, any paper that may be referred to it by the Association, or either of the Sections, unless specially instructed to the contrary by vote of the Association.

NOTICE FROM THE REGISTRATION COMMITTEE.

The Registration Committee is exceedingly disappointed to be obliged to give up the plan of registering by mail. It was believed that by that plan the members would be saved a great annoyance and the work of the meeting of the Association very greatly facilitated. Accordingly the matter was brought to your notice in THE JOURNAL, the necessary blanks printed and forwarded to Chicago. Arrangements had been made with the editor of THE JOURNAL by which it was agreed that an enclosure should be sent to each member two weeks before the meeting, but at the last moment it was found by the editor that the postal regulations made it impossible to send such enclosures. We regret the fact, but experience thus learned shows us that next year the plan can be carried out by making certain modifications. The accommodations for registration at Detroit will be made as complete as possible.

DAVID INGLIS, Ch'm. Registration Com.

"OPIOKAPNISM" OR OPIUM SMOKING.

With the evils attending the habitual use of opium, by the mouth and through the hypodermic syringe, we are in this country already sufficiently familiar. These forms of the abuse of opium, which have been grouped under the term "opiophagism" (that is to say, opium-eating), may be found in all parts of the country and in nearly every walk in life.

That other form of opium misuse, "opiokapnism," or opium-smoking, is as yet comparatively infrequent. It is resorted to somewhat in our cities by foreigners, orientals chiefly, and by the vicious classes. If the statistics of the Treasury department are not misleading, this form of indulgence has a growing tendency. With the duty upon the drug, as prepared for smoking purposes, placed at twelve dollars per pound there was taken into the Treasury last year, $750,000. This means that 62,000 pounds entered the country through the Custom House. In addition to this enormous importation, there is reason to believe that there was smuggled into the country many thousands pounds more. It is further stated that a million pounds of the stuff has been imported in the last eleven years, at the port of San Francisco alone.

The time has come to call a halt, and if necessary to prohibit the entry of the material altogether. We think it can be shown that this particular form of the drug is never used for any legitimate purpose. We never knew a physician to prescribe it, or to be charged as the responsible cause for opiokapnism. Its sole uses are as an intoxicant or as an aid to the perpetration of illegal and vicious acts. Would it not be well that Congress should interdict absolutely the importation of smoking-opium?

As to the injury wrought by opiokapnism there can, we believe, be little room for argument. We have recently seen a copy of a document, signed by fifty native, qualified physicians of Bombay, which testifies that the opium-smoking habit among their Hindoo patients and others is an unmitigated evil to mind, body, estate and the family. This paper states that "among the consumers of opium, even when they see that the habit is undermining their constitutions and observe the sad effects in those around them, they are unable to discontinue their daily portion. One evidence of the strength this habit exerts is seen in the fact that when the means of purchase are exhausted, rather than endure the physical torture caused by its discontinuance, a man will sell his wife and children to purchase the drug."

Our legislators will be warranted to enact laws which will prohibit the ways and means to any similar results in this country. The subject is not unworthy the immediate attention of Congress, before the evil habit has a chance to extend itself. Later on, questions of revenue will be liable to obtrude themselves, and render compulsory prohibition more difficult.

A RECENT OUTBREAK OF TYPHUS FEVER IN LONDON.

One of our illustrated newspapers touched up the subject of undesirable immigration, with a sorry looking picture of dirty and unkempt representatives, brought to our shores by the cheap steerage steamships; and under the cut was the legend, "This is the only kind of *raw material* that is imported now-a-days." Not only does this raw material come to us in a dirty condition, but it is infected or infective. And what is worse, it is not susceptible of fumigation, like the filthy rags that come to us on the same cheap steamships, especially those hailing from the Mediterranean ports.

The sole or chief advantage of this raw human importation is reaped by the steamship companies whose vessels are given an employment at low remuneration, instead of rotting at their wharves in idleness. The great disadvantages are experienced by the United States, because they are forced to assimilate all this unwelcome "raw material" and are compelled to defend themselves, at great cost and labor, against the infection endangering our ports and cities.

Not to follow out this reflection in a wearisome way, we believe it is right and expedient to ask the thoughtful men of our profession to con over in private and to debate with one another in public what must the end be of all this sanitary inattention and blundering on the part of our legislators. If these latter are, in point of fact, shirking their sanitary duties, they or some others of our "dear fellow citizens" will have to pay the penalty.

Some of the difficulties attending the management of typhus fever is illustrated by a recent paper by Mr. Shirley F. Murphy, one of the leading sanitary workers of England. He has been since 1889, the Medical Officer of Health of the County of London. The paper referred to was published in *Public Health* for April, and is entitled "Recent Cases of Typhus in London."

In the year 1890, he had to deal with a number of undoubted cases of typhus, some of which were not recognized as such before admission to hospital. Some were reported as typhoid fever, while others were not reported at all, being treated throughout their course as pneumonia or influenza. The spread of the disease was sluggish, and by single cases, at one time. There would seldom be more than two persons in a household sick at the same time, except where there were several young children in the same family. These were sometimes "taken down" together. So far as could be ascertained, the spread from house to house was by units, not by doubles or trebles. The children were not made very sick by the fever; the adults more so. The rate of mortality was low. The extreme difficulty of tracing the infection arose largely from the non-recognition of the disease before the case was seen by the sanitary officer or was taken to a hospital. The suspected avenues of spread or infection were numerous enough, but before the suspicion could be verified, some important point of testimony would be *minus*. For the most part, typhoid fever was the diagnosis declared by the family physician, in those instances where afterwards the health officer's fuller opportunies enabled him to signalize the case as one of typhus type. In one instance where four young children were admitted to a hospital suffering from that fever, the outside diagnosis had been made as scarlet fever. In another instance, in a district inhabited by the very poor, a disease of febrile character, with more or less delirium, a long chain of cases extending over a year and a half, was not clearly discriminated, until towards the last of the "run," two of the cases fell under the notice of Mr. Murphy, when the probable nature of the long-drawn "epidemic" was presumptively made out as typhus. The people of this ill-ventilated and narrow court had for their occupation the pulling out of hair skins and hides. When they became sick they commonly developed pulmonary symptoms. When they died the *causa mortis* was commonly certified as pneumonia or bronchitis. Under the health officer's direction the premises were fumigated, and other sanitation was done, so that the outbreak was speedily stamped out in that locality. In closing his report Mr. Murphy remarks that typhus fever is evidently very ill-recognized and that this disease "can exist in a poor locality for a long period without being identified." Of a series of thirty-five cases reported to the authorities as typhus fever, thirteen at least were not confirmed, while seven others were "very doubtful."

There is an implied etiological difficulty in all this recital. The ways of the infective processes are devious. Figuratively speaking, the periphery of infection has been explored, and that only. What we are curious to know—and it is vastly important from a sanitary standpoint that we should find it out—is why these are so rare or rarely reported in their habitats in Europe, and why they spread like wildfire when they find their way hither. Can it be that we are mistaken in viewing them with alarm, or in taking rigid sanitary measures in our cities? Are we unnecessarily suspicious? These are short questions, but their answers may be so long or so long coming that the present generation of learners will not hear them. We are persuaded that the complexity will be reduced somewhat by the work of the bacteriologists upon the *seed*; the susceptivity of the *soil*, here in America, can only be explained later when we arrive at a minute knowledge of the conditions of the comparatively sterile soils on the other side of the Atlantic. An analogous difficulty that awaits an answer is that concerning "cholera infantum," a disorder that is almost unknown in European towns, but here a regular annual visitant, more destructive of life than all the imported pestilences combined. The periphery of *this* problem is not yet fully mastered.

HOW A GENERAL PRACTITIONER MAY TREAT ATROPHIC RHINITIS.

This is the title of a paper published in this Journal May 21, page 636, and purporting to have been read before the Kansas State Medical Society at Fort Scott on May 4, 1891. (The date should be 1892.) By HAL FOSTER, A.B., M.D., Laryngologist to All Saints and Missouri Pacific Hospitals; Lecturer on Physical Diagnosis, University Medical College.

We very much regret the error of date given above, and which was entirely an oversight on the part of our proofreader; but, unfortunately, our attention is directed to the unpleasant fact that this carefully type-written paper read before the Kansas State Medical Society at its recent meeting at Fort Scott, is an almost verbatim reproduction of a paper on The Etiology and Treatment of Atrophic Rhinitis, by JONATHAN WRIGHT, M.D., of Brooklyn, New York, and published in the *Medical Record* of August 15, 1891.

We have to say that DOCTOR HAL FOSTER, Laryngologist, Lecturer, etc., exercised very good judgment in the selection of a paper for reproduction; but the wholesale gobble, without giving credit, of the labors of another man, and sending it forth as his own, is not only not commendable, but deserving of censure in very strong language.

AN AMERICAN MEDICAL ASSOCIATION MUSEUM.

In a recent issue of the *Medical Review* of St. Louis the editor, in an excellent article, directs attention to the great value an annual exhibit of pathological specimens of every description, of instruments, appliances, and of everything novel and interesting that has occurred in the practice of members during the past year, would have if placed on exhibition during the annual meetings of the American Medical Association.

The suggestion is a good one, and, as the writer says, would prove an incentive to many to renewed efforts, and do much to refresh a waning interest in medicine and surgery. Members would vie with each other in their efforts to contribute the best in their power, and this laudable rivalry would redound to the good of all.

Such an exhibit might be made the nucleus of a grand pathological museum, that would share honors with the superb and invaluable collection in the Army Medical Museum in Washington.

It is only for the Association to determine that it will have such a museum, and much of the work is done.

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.
WM. B. ATKINSON, Permanent Sec'y, 1400 Pine Street.
PHILADELPHIA, May 20, 1892.

DEAR SIR,—At our session held this day in Harrisburg, the following resolutions were adopted:

Resolved, That the Medical Society of the State of Pennsylvania hereby expresses its highest disapprobation of the practice of giving certificates or testimonials to secret preparations alleged to be of medicinal virtue, and calls the attention of the affiliated County Societies to the fact that such action on the part of members of the said societies is in derogation of the dignity of the profession, and in violation of the letter and the spirit of the Code of Ethics of the American Medical Association and of this Society.

Resolved, That this Society likewise expresses its disapprobation of the practice of inserting advertisements of secret preparations in the columns of medical journals, such action being an insult to the intelligence of the profession, and a degradation of journals indulging therein to the level of the patent-medicine almanac. Especially to be condemned is the action of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION in admitting such advertisements.

Resolved, That copies of these resolutions, duly attested by the Permanent Secretary, be sent to all County societies in affiliation with this Society, to the American Medical Association, to State medical societies in affiliation therewith, and to the publishers and editors of American medical journals.

Yours respectfully, W. B. ATKINSON,
Permanent Secretary.

THE ASSOCIATION OF AMERICAN MEDICAL EDITORS will hold a meeting in the parlors of the DETROIT MEDICAL AND LIBRARY ASSOCIATION, Cowie Building, Detroit, on Monday, June 6, at 7 P.M., for the election of officers and transaction of business. J. C. Culbertson, Secretary.

THE RUSH MONUMENT.—The members of the medical profession who may be in Detroit, in attendance at the meeting of the American Medical Association, the American Academy of Medicine, the American Medical Temperance Association, the Association of Medical Editors, the Medical College Association, and other correlated national medical organizations are urgently solicited to contribute to the erection of this monument. Cash contributions or checks may be handed to the representatives of the committee at the Association Hall or to the Treasurer, Dr. DeWitt C. Patterson, of Washington, D. C., at the Cadillac Hotel.

ROCKY MOUNTAIN MEDICAL ASSOCIATION.—The twentieth annual meeting of this Association will be held in the parlors of the Russell House, Detroit, on Wednesday, June 8, at 7 o'clock, P.M. Wm. Morris, Secretary, Baltimore, Md.

How an Electric Current may be Absorbed Into the Life Current of Human Beings; by Marion Guild Walcott, of Washington; is the title of a paper published in our last issue, and that we had eliminated from the papers read at the Annual Meeting in Washington, but by mistake got into our printer's hands. The paper was among those given to the editor of THE JOURNAL at Washington. It is hardly necessary to say the subject-matter is not in accord with the scientific knowledge of the day.

DRS. ALBERT L. GIHON, U. S. N., AND J. B. LINDSLEY, deserve the gratitude of the Association for so willingly at short notice taking the places of Drs. J. S. Cain and C. A. Lindsley in delivering the Addresses on General and State Medicine.

THE MONUMENT TO BENJAMIN RUSH.—The attention of the members of the medical profession is again called to the monument to Dr. Benjamin Rush, the great patriot physician of the Revolution, which it is proposed to erect in the city of Washington among those of the other illustrious founders of the Republic. In the person of this eminent medical man—"the greatest physician this country has ever produced," as he has been fitly styled by a very eminent physician, *happily still living*—*Medicine* will be worthily represented at the National Capital, as a profession which can boast of having public spirited citizens, fearless patriots, brave warriors, and wise legislators among its ranks. Benjamin Rush was, himself, all these. The members of the profession, who have not already done so, are urgently solicited to come to Detroit to attend the meeting of the American Medical Association, prepared to contribute towards the erection of this monument, or to send their subscriptions *at once* to DeWitt C. Patterson, M.D., Treasurer, 919 I Street, N. W., Washington, D. C.

ALBERT L. GIHON, M.D., Chairman.
GEORGE H. ROHE, M.D., Secretary.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting, May 31, June 2 and 3.

ADDRESS OF THE PRESIDENT.

By Dr. P. S. Conner, of Cincinnati.

Fellows of the American Surgical Association:—After a series of meetings at the National Capital, it is fitting that our first journeying should bring us to a city with which is associated so much that is good and great in the history of our country, political, literary, scientific and professional. Here, as a part of the University, that, like Suleinam of old is *Mater et Caput* of the schools, was established the second medical school in the Western Hemisphere, where for more than a century, scientific medicine has been well and thoroughly taught. The Massachusetts General and the City Hospital have been the theatres of much work that has strongly effected the practice of our art the world over, and one of them will ever be remembered as the place in which "the problem of surgical anæsthesia was definitively solved." Their surgeons, learned, skilful, progressive and inventive, by labors and teachings have honored themselves and the profession of which they have been so distinguished members. Not in America only, but everywhere the profession has held and now holds in high esteem the Medicine and Surgery of Boston.

The active life of the Surgical Association, that began with the meeting in Philadelphia, embraces a ten-year period than which no other in professional history has been more strongly characterized by extent and accuracy of investigation, by scientific judicious experimentation, by the discovery of important facts, by improvements in the technique of old operations and by the introduction and general adoption of new procedures. In the study of the causes of disease many master minds have been at work, and more positive knowledge has been gained than in all time before, so that in the bacteriological laboratories, a new pathology has been worked out, in large measure revolutionary of both opinion and practice. Speculation and theory have given place to experimentation and fact and the disease producing influence of airs, of earths, of waters have been found to lie in organisms that have been seized upon, separated, classified and tested.

We can scarcely realize that it was only in 1882 that the startling announcement was made that tuberculosis was consequent upon the presence and action of a definite microörganism that could be isolated, cultivated and inoculated; and that so short a time ago, the doubters were many more indeed than the believers. In this single decade just passed the fact has become universally acknowledged, the sceptics are now but professional curiosities; a new literature has been written; even a new language created in which strumous (except as a synonym of tuberculous) has no more place than phlogiston.

The long known chronic affections of bone, of joints, of glands, of skin, have been shown to be in great measure the result of the presence and action of a bacillus, that every where and under all circumstances moves in one and the same way and that a destructive one, though antagonized at every step by the healthy tissues (not seldom successfully) and subject more or less completely to the power of our art, directed to the procuring of the destruction or encapsulation of the germ, the removal of the infected tissues or the taking away of the affected part. We can understand now, why rest is of so much importance, why excision or erasion may be followed as it so often is by non-recurrence; why on the other hand, in spite of or even because of operative interference, parts near or remote become secondarily infected.

The most important work, as it seems to me, that has been done in connection with surgical tuberculosis is that which has had for its object, the finding out and properly applying a therapeutic agent which will destroy the organism and secure its expulsion from the body, or secure such condensation of non-infected tissue about it as shall form a wall around and by encapsulation render it harmless. Far better will it be to administer generally or locally a remedy that will remove the bacillus or make it innocuous than to do the most brilliant operation followed by the most rapid healing and recovery in large measure of functional integrity. The end is far from having been reached, but a long step in advance has been made, and the reviewer of the work of another ten years, may find the result secured and a non-operative truly murative treatment in use. It is certainly to be hoped, though, that scientific medicine will not again have to pass through such an experience as that of a couple of years ago, the history of which will always be of much interest to the students of psychology and of mental epidemics.

Of the three wound complications which from the earliest times have been the bane of surgery, septic infection, erysipelas and tetanus, the cause of only the first had been determined a decade ago: that of each is now known, and known because of the application to the tissues and fluids of those affected by them of the same methods of bacteriological investigation that had revealed the existence and life history of the pyogenic cocci. In erysipelas have been satisfied the three requirements of proof of bacterial origin, isolation, cultivation and inoculation into the human subject with resulting development of the original disease. Not a few of the long time perplexing questions connected with tetanus have found answer in the discovered identity of its causative organism with the earth bacillus and in the anærobic nature of it. In every case that has come under my observation, so far as I can now recall, except those associated with toy pistol wounds, I am able to trace either direct contact with the naked ground, or probable almost unavoidable contamination of the wound with dust and dirt. In the toy pistol wounds of the hands there is that exclusion of air and retention of fluid that are most favorable to the growth and activity of secretion of an organism that flourishes in the absence of oxygen, an organism that at the time of injury or later was located doubtless upon the dirty hand. Knowledge of the habits of the bacillus is sufficient of itself to indicate the treatment to be pursued that tetanus may not supervene, to-wit, thorough opening up and free drainage of the wound. Further, not only has the causative organism been found, but also it has been shown that there may be developed from it an antidotal chemical agent, the injection of which can produce immunity or act remedially upon a tetanic patient.

It is in the treatment of the diseases and injuries of the viscera and their envelopes that the greatest advances in our art have been made in these later years. Numerous and carefully conducted experiments upon animals and operative procedures upon man, new, bold and highly successful, have again and again been reported; and in the work that has been done, our own Fellows have no minor part.

The abdominal cavity, that for so long a time was an almost sacred territory not to be invaded except under peculiar circumstances and for the relief of a very few morbid conditions, has, because of the secured protection against sepsis, become one of the more common fields of operation, done on account of wounds, of tumors, of obstructions and of infective inflammation. Such operations not seldom have been, it may be believed, ill-advised, ill-timed, unnecessary and harmful, entered upon by inexperienced men, whose eagerness to cut has found explanation in the fact that in simple abdominal section few operative difficulties are usually met with and no dangerous hæmorrhage is to be expected, the arresting of which might test the knowledge and skill of the operator.

Penetrating and perforating wounds of the hollow and solid viscera are no longer treated solely by opium and ice with a resulting fatality truly appalling, but by section of the wall, suture of the wound, ligation of the bleeding vessels and antiseptic plugging, if necessary, of openings in the solid organs. The mortality rate is still unfortunately very high; how high can not be definitely stated, since the number of reported cases is yet limited and includes without doubt an undue proportion of successful results. Not a few of the deaths, it cannot be doubted, have been due to the delay, the incompleteness and the imperfection of the operation; but many must be credited to the damage primarily done. Made by bullets of other than the smallest calibre, a pistol wound of the stomach, of the intestines, of the mesentery or of the liver, is likely to prove mortal from shock or hæmorrhage even though treated properly and skilfully; and is almost absolutely certain to do so if fæcal extravasation has occurred and septic inflammation has set in. It cannot be questioned but that wounds made by very small balls may be, and have been recovered from without operative interference, and there is good reason for believing that in the absence of symptoms of active hæmorrhage, such wounds will do as well or better without as with laparotomy; an operation, however improved its technique, is still an addition to the risk of the case. It is as unwise as it is untrue to declare that there are no dangers attaching to incision of the abdominal walls and exploration of the intestinal tract. But when it is a bullet of large size that has entered the cavity, the safety of the patient almost certainly lies, if anywhere, in speedy, thorough operation. It is hard to understand such statistics as those of Reclus, in which it would appear that while without operation only 35 per cent. died, with operation, the mortality rate was from 75 per cent. to 86 per cent. That in three out of four, or six out of seven patients thus wounded, the result was a fatal one may be believed, but that it should be so in only one out of four expectantly treated, is, to say the least, very remarkable. Not the smallest of difficulties often associated with these wounds, is the determination of the occurrence of penetration, which at times can only be through opening up and following down of the parietal wound. Inflation of the bowel with hydrogen gas, the earlier experiments with which were so brilliant and so captivating, will not always give the desired information and may be positively detrimental to the best interests of the patient, as it certainly has been in certain cases already put on record.

The septic inflammations about the head of the colon, originating so generally in the appendix (which some would regard as an "intestinal tonsil" but may well be looked upon as a useless survival of a once important organ), have in the period under consideration been brought within the province of the surgeon, not as before at a late day when the resulting abscess has fortunately come well forward toward the surface, but at an early stage when by evacuation of the fluid with or without removal of the appendix, relief may be afforded and the patient be protected against the lethal effects of perforative peritonitis or perinephritic suppuration. The cases of acute disturbance in the region of the cæcum due to an overloaded bowel or to the catarrhal inflammation, will find relief in the future as in the past in the therapeutic measures of the physician; but suppurative gangrene producing appendicitis, it has been proven, and that chiefly by the experience of our American surgeons, can with safety be treated only by the knife. Whether or not it is advisable to remove, during a quiescent stage, the appendix that has been the seat of repeated attacks of inflammation, is a question as yet unsettled.

A very cursory examination of the professional literature, home and foreign, for the past decade, would convince any one that an immense amount of work, experimental and operative, has been done in the determination of the proper and most advisable methods of treatment in cases of obstruction, acute and chronic, malignant and non-malignant, located in any part of the tract from the cardiac extremity of the stomach to the lower end of the rectum. Strictures have been dilated, affected areas removed, anastomosis secured, "cut-offs" established, new openings formed; with the result in favorable cases of effecting cure or affording relief. The technique of the older operations has been much improved, modifications have been introduced, and not a few altogether new procedures have been devised, tested and widely accepted.

Pyloric stenosis, for which ten years ago pylorectomy was all that the surgeon could offer, may now, if of non-malignant character, be relieved by digital divulsion through the open stomach, by curetting, by a pyloro-plastic operation or by gastro-enterostomy; and if due to malignant disease, by the latter operation, in every way to be preferred to excision of the cancerous mass, being speedier and easier of execution and having a mortality rate but one-half or perhaps only one-fourth as great. In its performance, as in similar operations upon lower portions of the intestine, much use has been made of the approximation plates, as of decalcified bone, of leather or of potato, and of cat-gut rings and mats;

but at the present time there is certainly a strong and growing feeling that their employment is not only not necessary, but rather an injury than a benefit to the patient. It may well be questioned if, after all, viewing the subject in its widest aspect, operations for cancer of the stomach have really been or can be of much service. They certainly have often afforded much temporary relief and are to be resorted to when suffering is great and starvation is imminent; but on the other hand the prolongation of life when the operation is recovered from, is with only now and then an exception, but slight; excision has almost never protected from recurrence, the abnormal anasmotoses are very likely to speedily become seriously contracted with resulting loss of the benefit primarily secured and the necessitating disease must go on increasing, though it may be more slowly than before. In not a few of the reported cases, the condition of the patients at the time of the operation was fairly good, the suffering was slight and the general strength but little impaired, yet as the direct result of the surgical interference life was cut short. If we balance these cases against those in which a few week or months were gained by excision or anastomosis, it is very questionable if we can find in the result of operation any material addition to the sum total of life.

(To be concluded.)

DOMESTIC CORRESPONDENCE.

To the Editor of the Journal of the American Medical Association:

I take pleasure in informing you that at the last meeting of the Medical Society of the State of West Virginia, May 25, 26 and 27, at Clarksburg, W. Va., the resolution was unanimously adopted to appoint a special committee, which should urge the passage of the Caldwell Bill, creating a Cabinet officer of Public Health, upon the Senators and Representatives in Congress from our State.

West Virginia is in line, and if all State Societies work in unison under the leadership of the American Medical Association, we surely will be able to pass the Bill and accomplish other reforms to the honor of our profession. One of the subjects which was extensively discussed at our meeting was the "water supply and its relation to the spread of typhoid fever." The majority of the debaters admitted that chemical analysis of the water was useless. Topographical, and especially bacteriological investigations are necessary. State laws are entirely inefficient, for it is only through *National* legislation that it is possible to enact laws which are based on thoroughly conducted scientific investigations. Here was as good a proof as any for the necessity of a "National Secretary of Public Health," for under his direction this most important question of a wholesome water supply could have a better chance of being properly solved. The comments made in favor of the Bill are surely an indication that every member will try to assist the committee in urging the matter. A former member of the Legislature declared "that the doctors could accomplish anything they wanted, if they only showed that *they were thoroughly in earnest about it.*" Let us show a united front at the Detroit meeting. G. A. Aschman, M.D.

Wheeling, W. Va.

MISCELLANY.

The Medical Society of the State of Washington held its third annual meeting at North Yakima, May 11 and 12. The attendance was not large, but the interest taken in the papers and discussions surpassed that of both the previous meetings.

The following papers were read: "Report on Practice of Medicine," by C. K. Merriam, of Spokane; "Typhoid Fever and its Treatment," by C. P. Thomas, of Fairhaven; "Report of a Case of Leprosy," by H. C. Willison, of Port Townsend; "Report of Eight Major Amputations," and "Report of a Melanotic Sarcoma of Neck," by J. B. Eagleson, of Seattle; "Report on Ophthalmology and Otology," by A. B. Kibbe, of Seattle; "Some Practical Points on Diseases of the Ear," by L. R. Thomson, of Spokane; "Sympathetic Ophthalmia," by G. H. Mauzey, of Spokane; "Treatment of Immature Cataract by the Kalish Method," by G. S. Armstrong, of Olympia; "Report of Four Laparotomies," by C. A. Smith, of Seattle; "Treatment of Epilepsy," by C. W. Sharples, of Seattle; "Report on History and Necrology," by G. A. Weed, of Seattle.

The following officers were elected for the ensuing year: President, N. Fred. Essig, of Spokane; First Vice-President, G. S. Armstrong, of Olympia; Second Vice-President, F. M. Bell, of Kelso; Secretary, G. D. Shaver, of Tacoma; Treasurer, J. B. Eagleson, of Seattle.

The next meeting will be held at Tacoma, on the first Wednesday in May, 1893.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 21, 1892, to May 27, 1892.

Capt. Henry S. Turrill, Asst. Surgeon U. S. A., granted leave of absence for three months.

Capt. Aug. A. De Loffre, Asst. Surgeon U. S. A., the leave of absence on surgeon's certificate of disability granted in S. O. 93, A. G. O., April 20, is extended one month on surgeon's certificate of disability.

Official List of Changes in the Medical Corps of the U. S. Navy, *for the Week Ending May 28, 1892.*

Medical Director T. J. Turner (retired) granted one year's leave of absence, with permission to leave the United States.

Asst. Surgeon H. N. T. Harris, promoted to P. A. Surgeon.

Asst. Surgeon Geo. B. Wilson, promoted to P. A. Surgeon.

Asst. Surgeon Manly F. Gates, ordered to Naval Hospital, Portsmouth, N. H.

P. A. Surgeon J. F. Uric, detached from Naval Hospital, Portsmouth, N. H., and to the U. S. S. "Chicago."

P. A. Surgeon J. C. Byrnes, detached from the U. S. S. "Chicago," and granted three months' leave of absence.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Two Weeks Ending May 21, 1892.

Surgeon R. D. Murray, granted leave of absence for fifteen days. May 14, 1892.

Surgeon J. B. Hamilton, granted leave of absence for seven days. May 20, 1892.

Surgeon J. M. Gassaway, granted leave of absence for ten days. May 10, 1892.

Surgeon John Godfrey, when relieved as Medical Inspector of Immigrants, to resume command of station at New York. May 11, 1892.

Surgeon Fairfax Irwin, to proceed to New Bedford, Mass., on special duty. May 17, 1892.

Surgeon H. R. Carter, to proceed to Gallipolis, O., on special duty. May 18, 1892.

Surgeon W. A. Wheeler, detailed as Medical Inspector of Immigrants, port of New York. May 11, 1892.

P. A. Surgeon C. E. Banks, to assume command of Service at Portland, Me. May 11, 1892.

P. A. Surgeon S. C. Devan, to assume command of Service at Norfolk, Va. May 11, 1892.

P. A. Surgeon T. B. Perry, to assume charge of Cape Charles Quarantine Station. May 14, 1892.

P. A. Surgeon R. M. Woodward, granted leave of absence for five days. May 16, 1892.

P. A. Surgeon G. T. Vaughan, detailed as recorder of Board for the physical examination of candidates, Revenue Marine Service. May 9, 1892.

Asst. Surgeon C. P. Wertenbaker, granted leave of absence for seven days. May 10, 1892.

Asst. Surgeon E. R. Houghton, to assume command of Service at Vineyard Haven, Mass. May 11, 1892.

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ADDRESSES.

THE PRESIDENT'S ADDRESS—EVOLUTION OF MEDICINE.

Delivered at the Forty-third Annual Meeting of the American Medical Association, at Detroit, Mich., June 7, 1892.

BY HENRY O. MARCY, A.M., M.D., LL.D.,
OF BOSTON, MASS.,
PRESIDENT OF THE ASSOCIATION.

History repeats itself. Generations come and go and the problems of life are outlined from age to age in the same general way, since the underlying factors must ever remain unchanged. Each individual life modifies in a degree, both in character and quality, the sum total of human existence, and the kaleidoscopic pattern of the present offers new problems, and intensifies the interest in each succeeding year. The wise student profits by the history of the past and draws inspiration from its pages, as he confronts the present and with earnest endeavor shapes the future.

In this spirit we convene to-day from every part of our great continent, and devote our entire session to the consideration of the fundamental questions of life.

In the egotism of the present, we often underestimate the wisdom of those who have labored before us, and in our generation this has been especially true in medicine. When we recount the victories won and the enormous strides in scientific attainment within the last two decades, we may well be proud, but we must remember that a more careful study of the lives and labors of the really great of every age reveals a just comprehension of much that we claim as modern, and perhaps as our own individual discovery.

The American Medical Association holds a position among the great medical societies of the world in many ways unlike that of any other. Born of a felt want among the members of a profession widely scattered, in a comparatively new and imperfectly developed country, it struggled along in the weakness of its infancy, conquering the disadvantages of great distances, compassed by comparatively slow, tedious, and expensive means of travel.

In no profession is it perhaps more true that the physician, in the large share, is the representative citizen, and no matter how devoted he may be to his profession, he ever manifests a deep and earnest interest in the body politic, of which he is an integral part.

Under the stimulus of the civilizing and developing forces of the present, the activities of life are intensified as never before, and wherever the American citizen determines his residence, he immediately looks about him to ascertain in what way he can become an active, formative factor, and paints with roseate tint the horizon of the future, in the confident belief that the new settlement is soon to be the town, the town the city, until the broad acres of unproductive pasture are mentally divided into corner lots and, by some mysterious, unknown influence, populated by the leaders in the great subdivided interests of the world of trade.

In close touch with the magnetic, electric influence of modern thought, it would, indeed, be the exception if the devotee of our art did not thus at once hold himself a co-worker upon terms of equality with his medical brother, no matter how favorably situated in the great centers of an older civilization and development. Indeed, he sometimes feels, and with reason, that there come to him advantages in his new surroundings which cannot pertain to the older conservative centers of thought and training. Why should not this be true? Less closely allied to the dead past, closely in touch and sympathy with the burning ambition of the enthusiastic spirit of the living present, no problem seems to him impossible of solution, since the press keeps him in touch with the world, and for him modern science shall work out greater marvels than the miracles of Sacred Writ.

The early founders of this Association planted better than they knew, although he whom we shall always be glad to style the father of the American Medical Association, Dr. Nathan S. Davis, may well be called the seer and prophet of our profession. I voice with you a common sentiment—may he long be spared to wield, as from the first, his dominating influence in this great National Organization.

It was wisely enacted that our Association consist, in large degree, of delegated membership, since this makes it, as by no other plan, a representative body, and, as such, it is not too much for us to claim that we stand as the exponent of the medical thought and progress of our noble profession, represented in the United States alone by a membership of nearly one hundred thousand workers.

Modelled in a considerable degree upon the constitutional principles of our popular Government, we are supposed to recognize the wants and necessities, and, from year to year, to be able to outline and, in a measure, formulate the ever-changing needs and requirements of the public welfare.

Such an organization must have its own inherent law, styled "Our Code of Ethics." While you and I accept it as simple, sufficient, only determining in a very general way what constitutes the proper relationship of the members of a great profession to each other and to the body politic, it has been for many years, and is likely to continue, a question of discussion upon which there is a difference of opinion among honest and able men. The laity refuse to accept this as any other than a stupendous joke, with the criticism, "When doctors disagree, who shall determine?" and regard the differences between the so-called schools of medicine quite in the light of the denominational lines in the Christian church. A closer, dispassionate view, however, clearly shows that the differentiation must be made alone between ignorance and knowledge, since it is only fair to grant that considerable classes of men, devoted to a common calling, must be adjudged alike honest, and that their own selfish interest, in the attainment of success in any given profession, must be determined by the adaptation of what they consider the best means to a given end. Judged from this standpoint, the question has no parallel in the world of theological belief, since the medical scientist is dealing with objective factors, now certainly in sufficient number largely to eliminate the unknown quantities in the earlier problems presented by disease. Formulated as axiomatic in its written law, the profession for centuries has welcomed every addition of fact by which mankind may be less the sufferer from disease. But the warping of the judgment by conservatism and prejudice has oftentimes in medicine, as in the allied professions, retarded rather than encouraged independent original observation and research.

Judged in the light of our present knowledge, it certainly does not require prophetic vision to determine the lines of our future professional progress, since they must be based only upon scientific data. Such development, in no uncertain tone, means the abolition of *ism* and *pathy*, and there will be introduced in their stead, a more or less accurate interpretation of scientific laws, as to what constitutes the treatment of disease, of which year by year, there is the constantly increasing demonstration that the mere administration of drugs, no matter how valuable, is the least important part.

The evolution of thought, first applied in a given narrow direction by the founder of the so-called Homœopathic School of medicine is an admirable illustration of modern progress. Born in a measure as a protest to indiscriminate heroic dosing with powerful drugs, based upon a wild theoretic fancy, it owes its present existence largely to two factors. The first and by far most important, an unreasoning prejudice in the minds of a narrow conservative medical leadership, which by a kind of dogmatic ostracism persistently scouted the whole scheme as too preposterous for serious consideration, and hence aroused the active sympathy of the public for an ostracised minority, "as for the under dog in the fight," the critics themselves forgetting that in all diseased processes, nature is the physician's best ally, and that the sick do often recover without essential medication. The second, a wise appreciation of the advantages obtained by public sympathy and the determination to make the most from a haughty supercilious assumption of superiority by their critics. Under a competent leadership, from a handful of disappointed unsuccessful men, there has developed the most popular Homœopathic school of medicine, with a four years' graded course of instruction with restrictive critical examinations in all the fundamental branches of medical science, until the Homœopathic part is reduced to a mere addendum to the section of materia medica, almost as attenuated as the dilutions which, at its inception, it recommended to the credulity of its followers, a shadow of a name, a trade-mark in medicine.

A free government has its faults, its weaknesses. Under the fear that the individual right of the independent citizen will be interfered with by restrictive legislation as to who shall be considered competent to administer to the wants of a suffering public, laws regulating the practice of medicine, long recognized as necessitous in the great European governments. have slowly been enacted in most of the States of the Union. When under State or General Government law, it shall be determined upon examination that men have been competently trained in the knowledge of the chief branches of medicine, few of the five per cent. contingent, calling themselves Homœopaths will be content to remain so denominated, while the great body politic of our profession should institute measures to make it easy for such men properly educated to enlist in the grand army of workers devoted to unbiased investigation and the practice of scientific medicine.

"The blood of the martyrs is the seed of the church," the opposition even to a wrong is oftentimes the method by which it is developed into a monstrous evil. Note the different course of treatment which this *ism* received in Europe. The great Universities opened their doors to a willing demonstration of its real value and challenged the proof of its superiority in the treatment of disease in its general hospitals. The chairs of its professorships are vacant, and he who would learn of the development of the new 'art must come to the modern Athens of America, where the corner-stone of its temple was laid in the chambers of our Superior Courts of Justice by our own profession, who thus thought to destroy by legal enactment that which alone could feed on opposition.

As the indirect outgrowth of sectarian medicine and its influence upon the profession, in a general way, we have the anomaly of the New York State Medical Society, for so many years the supporter of this Association and foremost in its councils. Under the leadership of men who openly declared that the future progress of our profession demanded the abandonment of restrictive rules of polity, the very State Society from which the National Association emanated has withdrawn from affiliation with the general association upon the plea of restrictive and burdensome regulations, limiting official consultations to be held only with physicians properly educated. In order that the American Medical Association might be free from any possible criticism of a narrow or illiberal spirit, the following resolution was unanimously adopted at its annual meeting in 1885:

"Resolved, That clause 1, of article IV, in the National Code of Ethics is not to be interpreted as excluding from professional fellowship, on the ground of differences in doctrine or belief, those who in other respects are entitled to be members of the regular medical profession. Neither is there any article or clause of the said 'Code of Ethics' that interferes with the exercise of the most perfect liberty of individual opinion and practice."

We cannot question that this is in the true spirit of liberalism, and it should be accepted by the most radical expounder of the theory of evolution in medical ethics. During the present year, I have made most careful study of the question in its various aspects, especially as pertaining to New York City, and without exception I have heard only universal deprecation of the present society relationships of the profession, coupled with the pronounced opinion that the times were ripe for early re-adjustment and restoration of harmony. It had been my confident belief that this year would have seen this much desired state of affairs consummated, and to have had in any degree an active part in the bringing about this result would have been considered by myself the greatest honor pertaining to the high office to which you have elected me. I can only advise moderation in your councils, believing that at a very early date, harmony will be restored, and the medical leaders of our great commercial center, almost of necessity the most influential teachers of our country, will be without exception in active co-operation with the National Association. However, the evil which we deprecate has had a resultant good in the formation of the New York State Medical Association composed in large share of active workers in this organization, and which has adopted as a part of its organic law that, "the Code of Ethics of the American Medical Association shall be the Code of Ethics of this Association and shall form an integral part of their By-Laws." This large body of active workers in our profession have already established a permanent society home in New York City, with a large medical library, and a beautiful hall for the accommodation of its meetings. The eighth annual volume of its transactions has recently been published, containing nearly seven hundred pages, consisting of many valuable contributions upon original investigations and research. The society has upon its roll of membership, seven hundred and forty names. In a free discussion upon the subject with its leaders, as with those of the New York State Medical Society, I did not find a single individual who did not deprecate the existing division in the profession, and who would not welcome any honorable means by which reunion could be effected. The rivalry of the society interests has stimulated both to the increase of scientific research, until the fruitage of each is greater than that of the society before its division.

The Relation of the American Medical Association to the General Profession in America.—There has arisen, even among the warm supporters of the American Medical Association, the inquiry if the larger service of the organization to the profession at large had not been accomplished, coupled with the criticisms: that our country is far too great, and extending over too much area for any one central body; that the development of our art has grown beyond the possibility of personal compass; that this is the age of specialism; and that the evolution of the medicine of the future must of necessity be in the hands of the special societies devoted to the perfecting of certain lines of investigation.

In the recognition of a common want, there have been formed National Societies, limited in membership, covering all the special branches of medicine and surgery. Under the leadership of a few master spirits, it has been thought quite sufficient to bring these special societies together at repeated intervals under the attractive title of "The American Congress of Physicians and Surgeons." All this personally meets my approval, when we consider the stimulating and refining influences of men meeting together bound by the common tie of special study and research. In the fruitage of such union of labor, the profession may well rejoice, but I cannot help thinking that such an argument is founded on a false conception of our profession and its duties and relation to our life work; since, regardless of the specialistic development to which we may subsequently attain, we must all begin upon a common level and master with greater or less fidelity and patience, the fundamental branches of medicine, and he who does this well and perfects himself most broadly and deeply in a general way, in practice as well as theory, finds himself subsequently the better fitted for specialistic labor. In the general field of medicine the great rank and file of the profession must continue to work, and as the Representative Body of this vast army of workers, the American Medical Association, without fear or favor, must continue to be its exponent. Here, as upon a common altar, the most obscure may bring his offering, and find inspiration which will help him subsequently to develop into a leader in some one of the many fields of specialistic research and contribute to the resources of his profession in such a way that we gladly entwine about his brow the laurels of immortality. The names of nearly all the great leaders of the American medical profession are engraved upon our own escutcheon, and he who recalls such men as Sims, Gross, Flint, Storer, Bowditch, Campbell, Richardson, Sayre, Davis, and a host of others, both dead and yet living, regards with a commendable pride the relationship and power which these illustrious formative leaders have had in this great National Association.

Let there be no jealousy aroused between the National Societies of our country. The field is large, the work is ample, and many there be who are thoroughly competent to labor in their respective departments, and yet remain foremost in State and National Organizations. The American Medical Association has its own peculiar and legitimate field of work; at touch with the great body politic which it represents, it is quick to receive and to reflect the latest and the best from whatsoever source it may emanate, and to it the entire country, for its labors in the promotion of the highest welfare of the nation in the scientific department of medicine and its allied branches, owes a debt of gratitude which it can never repay.

Relation of the Association to the State Societies.—It has been my good fortune during the present year to attend several of the annual meetings of the State Medical Societies, and note the earnest work which is being locally accomplished. Although everywhere the privilege for associate labor in the National organization is recognized, the interest which the respective State Societies manifest, in this direction, is lacking in a general way, and very few comparatively of their members, especially from the Eastern States, attend our meetings. The State Societies were intended to be, in fact, branches of the National Organization, and as such each should work together in harmony for the good of all. A unification of the State Medical Societies as integral parts of the American Medical Association would go far toward making easy the solution of many questions by concert of action, and I would respectfully suggest that measures be at once instituted for the development of a much closer relationship between the State and National Societies, and that the request be made to every State Society that the dates of their annual meetings shall be arranged so as not to conflict with that of the National Association. I have long deprecated this in my own State, where the annual meeting of the Massachusetts Medical Society occurs in June, the same week in which the Association convenes.

It would be well also, if it is within the limit of our power, to stimulate the State Societies to a more general active coöperation within their own boundaries, and I refer, as an illustration of this, to the Massachusetts Medical Society, with a present membership of over seventeen hundred, who devote two days to the annual meeting and close with a grand banquet, at which more than one-half of its entire membership are in attendance. In this way much could be accomplished in increasing and strengthening the influence and power of the medical profession and making its opinions felt in an ever-widening influence in our national polity.

Journal of the Association.—The Journal of our Association has already advanced to a position of influence, second to that of no other medical publication in America. With a circulation of over six thousand copies it is now a source of independent income. Under a wise leadership and editorial management it has steadily improved and gives promise of a much greater development. It should be a weekly interchange of thought and the distribution of the latest and best, at a very early future, to a membership of three or four times its present number, an ever increasing bond of union between our members, with whom it should be the pride, as it is at present within our power, to make it the leading journal of the world.

Our Annual Meetings.—The best disposition of the limited time at our disposal, at the annual meeting, has recently been a subject of active discussion. Much valuable time is wasted in our general sessions in the discussion of questions of minor importance. It seems to be within the nature of things, if you would arouse most earnest discussion in an American convention, to bring up some minor clause of a by-law, upon the differences of which there will be found ready champions to fritter away hours in useless debate. To this criticism our organization has often been open, but happily less at each succeeding meeting, until now the especial addresses have justly become a noteworthy feature of the latest and the best.

Section Work.—We are glad to note the persistent effort which is being made for the better development of the Section work, along the lines of which the really great good comes to the profession from our Convention; not only is this noteworthy in the large number of very valuable original communications, but equally in the discussions which they evoke. Every encouragement should be given to the still further improvement of the Sections, and I earnestly enjoin upon all our members to come to the annual meetings with the purpose of spending, as far as possible, the entire week, that we may take time for our deliberations, and, by our example, offer an earnest protest to the great American fault of *hurry*, which too oftentimes is a synonym of imperfect work. Dr. Leartus Connor, of this city, gave a vigorous address last year before the Section of Ophthalmology, in the advocacy of better work in the Sections, which should be read by every member of the Association. If in any department of learning deliberation should be encouraged, it is certainly in that of the great issues of life with which we must necessarily deal. In this connection, it is not invidious to make reference to the objects and interests of that other National body which has just closed its session in this city, the American Academy of Medicine, which we believe has acted wisely in holding its meeting in conjunction with that of our Association, the objects of which are antagonistic to none, and should receive the cordial sympathy and support of all. It has already accomplished much in elevating the standard of medicine in America, by demanding a more careful preliminary education and thorough training, and by its influence and power, it has aided largely in establishing *State Examining Boards* and having laws enacted for the protection of the people from incompetent and ignorant practitioners of medicine. In the furtherance of this work our Association, without dissent, should earnestly enlist, and demand from each individual member of our profession fitting qualifications for the discharge of the highest responsibilities in the welfare of our race; and that, so far as possible, the great body politic be instructed that their vital interests shall be protected from ignorance and imposture.

We cannot but deprecate the too frequent publishing, in the daily papers, of sensational reports of startling operations performed by men who are justly famous operators. This parading of their skill, served up with all the ghastly horrors of the imaginative reporter, may be conducive to a cheap notoriety, but it is certainly false to every sense of propriety and professional etiquette.

State Medicine.—Within the last few years State medicine has assumed an importance and magnitude never before appreciated, until it is now admitted that a very general class of interests incident to the public welfare should be relegated to men especially trained in the various departments of Sanitary Science, and it is not too much to believe, in the early future the citizen will demand of the State, as one of his inalienable rights, no matter how poor or obscure, or where located, that he shall be able to breathe an air free from infection, to live upon an uncontaminated soil, and be furnished with water ample in quantity and of a quality free from defilement.

Under the restrictive laws of such wise supervision, the infectious diseases will be curtailed, and it is to be hoped ultimately they will be stamped out of existence.

In this connection I would call your attention to the great public necessity of the revision and re-organization of the so-called *Coroner Laws* in the different States, a subject upon which, as chairman of a committee appointed for this purpose, I have for several years made annual reports *in extenso* to this Association, pointing out clearly many defects of the existing system. The different State Boards of Health feel the necessity for immediate action in the correction of this, perhaps the most defective of all our methods of securing justice, a want which the legal profession recognize as much as our own. This, as well as the question of *expert testimony* in our courts of justice, as to who shall be considered competent to discharge this important branch of public service, are subjects well worthy of your early and careful consideration.

Intemperance.—This generation, as none other, has witnessed the discussion of topics of great moral reform, prominent among which is the question of intemperance, until, under an aggressive leadership, were it possible many would abolish the very law of fermentation. It has assumed national importance, in many localities placing the distribution of intoxicating liquors under legal control, and we now behold a political party as its outgrowth, with an active organization which would assume national supremacy. Many of our own profession are found within its ranks. This is not the place to discuss the question of temperance, or its political issues, but no class of citizens are so well qualified to instruct the public upon the uses and abuses of intoxicating liquors as the members of our own profession, and in this direction a greater responsibility rests upon the physician than upon any other citizen. I am glad to commend to your favorable support the organization of our own fraternity for the study of this subject and the best methods for its suppression. We are indebted to them for the demonstration that intemperance should not be regarded as a vice, but rather as a disease, and that appropriate measures should be instituted for its cure. Dr. T. D. Crothers, of Hartford, is a vigorous advocate of this modern view of intemperance as a disease, and shows by ample statistics that more than one-third of all who have been the inmates of asylums for the treatment of the intemperate, have remained permanently cured. "The curability of the inebriate is far more certain than that of the insane, the liberty of both is equally dangerous; one is recognized, the other is seldom restrained until he becomes a criminal. * * * The inebriate is mentally and physically sick and needs the same help as the insane, and the question of care is simply one of adequate means and remedies to reach the disease." One of the most remarkable phenomena, widespread as the human race, disseminated alike among savage and civilized, is the demand for artificial stimulation.

The maddening influences of drink and its attendant crimes have already been greatly lessened, but diminished as are the uses of the stronger alcoholic preparations, in a somewhat corresponding ratio that of the lighter wines and malt liquors have increased, while the consumption of tea and coffee has enormously outgrown that of any previous time. Men struggling under the felt power of alcohol are never without a desire to find relief, which fact has been singularly overlooked, when adjudged from the standpoint of bad habits and the intemperate zealot who would correct them. Whatever may be thought of the imposture and illusive hopes of "The Golden remedy," the hundreds of intemperate men who, in the last year, have voluntarily sought relief in it attest the fact that the victims of this great evil desire a cure, and they should legitimately turn to our profession and find under their wise administration, its mastery, as that of any other disease.

National Board of Health.—The advocacy of a National Board of Health is no new subject, in this Association. It seems but the corollary to the proposition in the organization of our governmental polity, that, if State Boards of Health have proved so efficient in the protection of the great public welfare, a National Board of Health would be equally necessitious in dealing with questions of widespread and general importance to the whole government, as also in the centralization and dissemination of valuable knowledge. It has been urged with reason, and I trust also it is soon to be carried into effect, that not only such a wisely selected Board of Commissioners should be reëstablished by the general government, but also that it should find its exponent in a specially appointed member of the Presidential Council to be known as Secretary of the Public Health. A committee was appointed by the Association last year to petition Congress for the establishment of a Department of Public Health with a chief Secretary, which will doubtless report at this meeting. In the United States such an organization is not only more necessary than that of any other country, on account of its wide-spread geographical area and population, existing under more diverse conditions, but also because the medical officers of our government in both the Army and the Navy Departments are much less in number than those of the European nations. However, great honor is to be accredited to our country from the very valuable services of the medical corps of both the Army and the Navy to which that of the Marine Hospital Service is no exception. We are deeply indebted to the American Public Health Association for the exceptional work which has been accomplished under its auspices in the advancement of sanitary science and the practical application of public hygiene. Its publications have proved a very efficient means for the dissemination of valuable knowledge.

In 1879 a National Board of Health was appointed consisting of seven members, selected by the President from civil life, and four *ex officio* representing the Army, Navy, Marine Hospital Service and the Department of Justice. For three years this National Board had an active existence, and I have yet to hear any serious criticism of the very valuable work effected under its direction. Yet under the plea of economy, appropriations were denied and little is left of this public service except a name.

Although we cannot criticise too severely the action of our government in this direction, we have little to blame except ourselves, since the public are not educated to recognize its *occult* and unseen foes and are necessarily dependent on the medical profession for the dissemination of such knowledge. During the last decade it has been demonstrated as never before, that the causation of most of the infectious diseases that sweep over the country are particulate vital organisms, which infect the individual, reproducing to a possible harvest of death. Such knowledge makes clear certain outlining of rules for precaution and prevention, upon which are based the so-called Quarantine Laws against the invasion of foreign pestilences, as cholera, yellow fever, etc. This is really a small part of the public service in the protection of the community.

A National Health Department must be necessarily in part educational, and the diseases which cause the great harvest of death in a community, as diphtheria, typhoid and scarlet fever, and consumption are pests which the public have a right to demand of the government should be held in control, and it is not too much to believe that the foreshadowings of modern science point to their ultimate extinction. No greater economy can be exercised by our people than the endowment of such a Board with every needed scientific appointment, with fully equipped laboratories for the careful study of all the sources of disease, which shall take in the surroundings of the individual and the means best adapted for his subsistence, so as to make him in the largest possible degree a healthy working member of the body politic, contributing his full share toward the public welfare.

In effect, everything dependent upon the development and continuance of a long life of the individual should fall legitimately within the scope of inquiry.

Upon demonstration of the need, no nation is so quick to respond and utilize its advantages as our own, and the real remedy must be found, not in complaint concerning the government when compared with that of other nations, where the enlightenment of the few serves to direct the conduct of the masses, but rather in the dissemination of knowledge broadcast among our people, and if each member of our profession would avail himself of that which is already known, and instruct those with whom he comes in daily contact, in a very brief period, in answer to a popular demand, emanating from the people, educated to perceive their great need, the advance in sanitary science in the United States would surpass the wildest dream of its present most enthusiastic devotee.

The Department of Agriculture.—The department of agriculture of our general government has been most efficient in the public service and has contributed to its welfare far beyond what has generally been supposed. As a broadening of its field of labor, a bill is now pending in Congress introduced by Senator Paddock, of Nebraska, which has for its purpose the protection of the public from the adulteration of food products and drugs in the United States. It is an important subject, an effort made in the right direction, for the protection of the people from stupendous frauds and imposture, resulting in great injury to the community, oftentimes fraught with the gravest dangers to life, and it should meet with the heartiest approval and active support of our entire profession. The food products presented for sale in our markets should be reasonably safe for public consumption, as assured by government inspection. It is now demonstrated that our milk supply is often the means of dissemination of typhoid fever, and of the bacillus tuberculosis.

The diseases of our domestic animals require much more careful study, and the public necessity demands that the meat of only healthy animals should be permitted to be sold for consumption.

The wise restrictive legislation of European Governments, interdicting the sale of non-inspected meat, has been the subject of many public protests in our country, and the appeal to the necessities of our commercial interests appears to demand the inspection of all meat products for exportation. It is but just that our own citizens should be in this direction equally protected, as those of other nations, with whom we deal. Tuberculosis may be transmitted to man by the ingestion of tuberculous meat. Other diseases, as the transmission of the tape worm and trichinæ are illustrations much better known. Dr. Abbot, Secretary of the Massachusetts Board of Health, informs me that since the middle of February more than fifty cases of trichinosis infection with five deaths, have been reported in Boston. He gives it as his belief that at present a considerable proportion of the pork offered for sale in the Boston markets is infected with trichinæ.

The Massing of the People in our Cities.—The present is a generation of city builders, and in our own country our great centers of population have been intertwined within a half century with nearly 200,000 miles of iron ways, distances so vast that they can be appreciated only by comparison; more than sufficient to bind the continent from ocean to ocean by eighty great highways of rapid travel, or, if projected in a single line, quite long enough to reach the moon. This wonderful system of steam communication has in its service a great force of workmen, a moving army in time of peace, ever subject to exposure and danger. This large factor of the body politic demands of our government a special supervision to minimize, as far as possible, their perils. The ease of inter-communication has greatly increased the movements of our ever restless people, while the demands of trade alone has organized under its banners an army of three hundred thousand professional travellers. Few of us can appreciate the activities of the present age. The railway systems of the United States alone have expended in the last ten years, in their development, an average annual sum of five hundred millions of dollars. In the year of 1889, in our country alone, one religious denomination erected over four thousand new churches, an average of over eleven each day. "Put them in line on the first day of January, when the sun went across the country on the lightning limited at the rate of a thousand miles an hour, his light would have fallen on a new church roof every third second as the sunrise flashed over hill and dale."

The complex questions of city living are ever becoming more and more difficult of solution. Can a million of people be massed together, and each live better, accomplish more, suffer less, and lengthen their existence? It is given to you alone to answer the question in the affirmative.

Our Relations to the Medical Profession in Foreign Countries.—In geometric ratio with the years our influence in the great body politic of the medical world increases. That which, a generation ago, seemed like the wild chimera of a scheming brain, an International Congress of Physicians and Surgeons, has been now ten times triennially repeated, and the influence of each International Medical Congress has deepened and intensified. The day may be far distant when a universal language, now the Utopian dream of many, shall see its fulfillment, but in medicine it is an accomplished fact. No longer is its science written in the language of the few and buried in ponderous tomes for the resurrection of the coming centuries. Any discovery of real value almost at once, after its publication, is read throughout the civilized world. Wherever medicine is the better taught, there gather devoted students. In large numbers our representative youth are found in the great medical centers of learning in England, in France, in Germany; and even far-off poverty-stricken Italy is resuming again something of her former prestige and the mantles of the great masters of the sixteenth and seventeenth centuries are falling upon worthy shoulders of the sons of this present generation.

The relations of our Association with the great Societies of Europe have been in unbroken harmony until within the last two years. We have been delighted to receive from and send delegates to all the foreign Societies, and the unflagging interest and devotion of the American physician to his profession was illustrated in the enrolling of over six hundred and fifty delegates from the United States to the International Medical Congress, held in Berlin, in 1890, the largest number representing any nationality, excepting that of Germany. The great majority of these were delegates from this organization, a very considerable number of whom were also sent as delegates to the British Medical Association, which held its annual meeting in Birmingham. Unfortunately, many of these felt themselves deeply aggrieved at a seeming neglect on the part of the local committee.

By vote at the last annual meeting, the appointment of delegates to the British Medical Association was left to the President and Secretary General, with full powers. My first act as your chief executive was the presentation of the subject to the Council of the British Medical Association; a copy of the correspondence is herewith appended. The result is all that could be asked and is embodied in the following resolution:

> "*Resolved,* That the President of the Council be requested to inform Dr. Marcy that it is not proposed to deprive of any rights they may have acquired those American citizens who have been elected members of the British Medical Association, but as such elections have been found to be illegal, no more can be permitted to take place. Further, that the honorary membership of the Association is only given *honoris causa* to a few specially distinguished persons by vote at the Annual Meeting of the Association. And lastly, that the officers of this Association will always be pleased to receive and show every consideration and hospitality to all properly accredited American visitors."

The International Medical Congress to be held next year in Rome, already gives promise of renewed activity in the medical world of Europe, while energetic measures have been instituted in the Western Hemisphere for a successful meeting of the first Pan-American Congress, to be inaugurated in our own country the coming Columbian year. If our nation fulfills its apparent destiny, the early future will see no longer the necessity of our advanced pupils making European pilgrimages for original research and study in foreign languages, but the rather that our own great centers of learning will be selected as the Meccas of the best modern thought, where students of all nationalities shall gather for instruction.

The South American continent is emerging from its ruder state of semi-development and its far too long delayed civilization, and is undergoing a transformation, which promises much for the immediate future. Another century should make it the home of one hundred millions of prosperous peoples, and its vast resources should be utilized, not alone for more than fullfilling the golden dreams of its first conquerors, but the adding of untold millions to the world's wealth and resources.

Professor Virchow, in his Presidential Address before the last International Medical Congress, congratulated the Surgeons of America as, at present, representing the best attainment of surgical teaching and practice in the world. It is not too much to claim that we are now equipped to compete successfully with any of the great centers of European learning for the teaching of medicine in all its numerous branches, and few more potent measures can be advocated, for the better union of all our western interests, than the moulding of the scientific thought, in its various branches of learning, of the leaders in this coming civilization of our great Southern Continent.

But I will not weary you with further detail as to possible obligations and duties, arising from our special knowledge and our relations to the general public, of whose interests, both of health and disease, we are the acknowledged custodians. We are a profession, oftentimes belittled and decried as fattening upon the public misfortunes, from the attendance upon whose ills we derive our direct support, but the broader view of our field of labor is the prevention of the very ills we are supposed to cure. From this standpoint, no profession, not even excepting that of the clergy, has a more noble vocation. The last two decades have witnessed a revolution in the surgical art, until it is now founded upon the great principles of a sure science, and is practiced with a certitude, and with results more remarkable than the tales of Aladdin.

The battles over the best methods of modern wound treatment have oftentimes waged fiercely at the meetings of this Association, and if not "fought to the finish," have certainly won glorious victories in behalf of humanity and the establishment of scientific truth. The new demonstrations upon the causation of disease have already revolutionized the teachings of medicine and introduced a brilliant era in the practice of our art.

Sanitary science, the prevention of disease, has largely curtailed the whole class of zymotic affections, with a possible future promise of their eradication. Small-pox, which once swept as a pestilence unrestrained over continents, destroying over half of its victims, has, by the simple method of vaccination, been placed within such limits that it is practically expunged from the death roll even of our great cities.

Consumption.—The fell destroyer, consumption, is the greatest scourge of the human race, counting its victims, in the United States alone, over one hundred thousand annually. We have the clear demonstration of its cause, as a particulate morbific entity, with its life history and development now clearly established; how it enters the human organism and by its [illegible] development, results in the death [illegible]. The discovery is sufficient honor to one man, we might almost say to one generation, since based upon such knowledge, there must develop means for its control, if not its extirmination.

"A nation's health is a nation's wealth," a nation's happiness. The application of the principles of modern science, as already known to you, introduced into the practice of daily living, would diminish sickness and suffering one-half, and the death rate by at least one-third.

Sorrow and mourning thus lifted from the race would make the future of our existence almost Utopian and change the whole aspect of life. Remove this burden, the expense attendant upon sickness and death would be lessened to the extent of hundreds of millions of dollars annually, and the income of the race would be doubled.

Whatever those untaught in medicine may think, you and I well know that we are not giving an unbridled rein to an illusive fancy in imaginary speculation. It is a scientific demonstration, formulated in general terms, "the survival of the fittest."

Through the long lines of scientific research, dating back since man has knowledge of the introduction of life upon our planet, this law has held good. In its far reaching effect the individual of the present is no exception. Life itself may be denominated a battle for existence. The invisible vital organisms with which we are surrounded make up in numbers that which they lack in individual force. They utilize what seems the dead and decaying albuminoid products for their own development, thus separating into their ultimate elements the very material of existence and in its changed relations fit and prepare it for new and higher uses. Thus nothing is lost, nothing is wasted, simply changed, reformed to undergo anew its part in the great drama of life. This vital principle, the factor of existence, which has not yet been given to man in the equation of life, to be represented in known terms, permeates every living individual cell, and thereby gives it a vital inherent resisting power.

Devitalize this below a certain standard, and it becomes the prey of other living forces. This, in the individual, we denominate disease. In the struggle for existence, the higher vitalized organism survives, and, when the various functions of the extremely complicated machine which we call man are working together in harmonic rhythm, we denominate it health. Such a complex machine, like every organic thing, should have its function, its little part in the world's drama, and evidently was intended to wear out through the exhaustion and decay of its own formative processes, and when applied to man means the rounding out of a long life, subject to the infinite possibilities of subsequent immortality.

The accidents to such a complex machine, the infractions of construction, we have been wont to call surgical. When, however, by the aid of a better armamentarium, we are enabled to trace the developing colonies of anthrax, until considerable portions of the circulatory system are impeded by the presence of these minute, invisible organisms, or large portions of tissue are robbed of their nutrition and become devitalized by the growth of the bacillus tuberculosis and the attendant changes, who shall declare that these too are not objective, and should, in the broader sense, be considered accidental, and never a part of normal environment? If this be true, it becomes us as a great high priesthood of the most sacred calling, veritably as Moses to an enslaved people, to point out the way of life, its dangers, and how to avoid its accidents, and to direct in the great highway of human endeavor the development and fruition of the human race; a training of the soul's pupillage for immortality. *Mens sana in corpore sano.*

We pause a moment in grateful remembrance of our honored dead. During this year our entire country has again been swept, as with a tornado, by the all-pervading epidemic from which, on account of the exposure and hardship incident to our profession, it has been especially a sufferer. Its death-dealing influence has very naturally fallen most heavily upon the aged and the infirm, although its victims have been taken unsparingly from the young and vigorous of all vocations and all professions. In no one year has our Association been called upon to mourn so large a loss of its members, among whom its distinguished presidents Dr. Campbell, of Georgia, Drs. Storer and Bowditch, of Massachusettes, and now only just added to the list Dr. Richardson, of Louisiana, have been gathered to the "great majority," each a master in his own special department of professional labor, all distinguished as teachers and authors, especially wise and skilful and famous in the public service which they so freely rendered for the welfare, not alone of their respective communities, but also for the nation.

In the ripe maturity of years each had lived the recipient, in a very large degree, of public honors and emoluments, with the happy consciousness of a just recognition, not only at the hands of a noble profession, but also of a generous public, of the faithful discharge of disinterested duties. All honor to such names; if our young men require illustrious examples of the full fruition of noble lives, well spent in earnest, unselfish labor, let me point them to the careers of our noble chieftains whose loss to-day we mourn, whose memories we honor, and whose examples we emulate.

In the many subdivisions of labor, each is naturally wont to consider his part therein as the more important. To the politician, representation with its attendant possibilities and power seems the high goal of ambition, and to its attainment he bends all his energies.

To the statesman, the adjustment of the great principles of government so that they may be conducive of the greatest good to the largest number.

To the lawyer, the principles of justice and equity as worked out in the experiences of the centuries for the harmonic relationship of individuals to and with each other.

To the clergy, the divine mandate, declared in the so-called Revealed Word, vivified in the flesh, until it permeates all mankind, and each receives and is quickened by its spirit—the evolution of the higher theology—God in us working out his grand purposes, as the foretaste of the immortality beyond. He reads it in the Revealed Word which has been transmitted through the generations, as having emanated long ago from Divinity itself. He points out to you a highway of escape from the penalties of the transgressions of Divine law.

You and I are, in no less degree or kind, a high priesthood of a no less sacred profession. We read the mandates of the Creator by no uncertain transmission of revealed word. We see them repeated and revivified in every succeeding generation. In letters of living light we read the law in no uncertain language, and we note that its transgression is irrevocable, and oftentimes means death to the organism. There is no mediatorial highway for the escape from its penalties, and no remission of its judgments under plea of ignorant infraction of its mandates. If this is true, the vital interests of the individual rest upon a better knowledge of, and obedience to its laws. In the evolution of medicine and sanitary science lie in large measure the resulting happiness and destinies of the human race. In the broader view, the differentiation of life's factors becomes difficult, and perhaps they were never intended for ultimate analysis.

In the ever-changing kaleidoscopic pattern, the individual factors of man's personality should intertwine and blend as the colors in the hand of a great master, in perfect harmonic symmetry and relationship. To you and I at least it is given to render in no uncertain tone the fiat of God's own law, unchangeable, repeated from age to age, from generation to generation. To us it is given to contribute our part to the symmetrical development of the great tripod of human existence—the mental, the moral, and the physical nature of man, upon the harmonic action of which must ever rest the destinies of the human race.

PROF. KEEN said that in cases of profound shock the best drug that can be given is sulphate of strychnine; hypodermic injection, $\frac{1}{30}$ gr. Also give brandy.

ADDRESS IN SURGERY.

At the Annual Meeting of the American Medical Association, Detroit, June, 1892.

THE GENERAL PRINCIPLES OF THE SURGERY OF THE HUMAN BRAIN AND ITS ENVELOPES.

BY JOHN B. HAMILTON, M.D., LL.D.,

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Mr. President and Gentlemen:—The duty of delivering the annual address in surgery, has this year been assigned to me, and while I deeply appreciate the honor, it was with a profound sense of the difficulties of the task, that I accepted it.

The founders of the plan of general addresses no doubt intended that each address should constitute an annual review of the whole subject assigned. But at this date, the time at the disposal of your orator will not permit it, and for the past few years the custom has been, to select some particular division of the subject as the topic for the discussion. My topic on this occasion will be: "The General Principles of the Surgery of the Human Brain and its Envelopes."

"On earth there is nothing great but man,
In man there is nothing great but mind."

The diseases and injuries of the seat of the soul can never be a matter of indifference to the practitioner of medicine and surgery. Mental diseases must forever occupy the highest place in pathological study, for it is obvious that the disturbance of the physical condition of those structures by and through which the phenomena of human life and intellection are manifested, is of the utmost consequence.

It has long been an axiom that there is "No wound of the head so trifling as to be despised, and few so serious as to make life despaired of." But notwithstanding this axiom, there has been throughout the ages past a quite general reliance on the *vis medicatrix naturæ*—that invariable refuge of inadequacy.

It is true that trepanning has been employed from the earliest times, and that the dura mater has been incised in many cases by the older surgeons; but the brain itself has seldom been touched.

Salvianus mentions a lunatic who by accident had the skull broken and was "excellently cured:" and another who "breaking his head with a fall from on high, was instantly recovered from his dotage." (Burton.) Gordonius recommended "the head to be shaved and bored to let out fumes, which without doubt will do much good. I saw a melancholy man wounded in the head with a sword, his brain pan broken; so long as the wound was open he was well, but when his wound was healed his dotage returned again." Guianerius cured a nobleman in Savoy by boring alone, "leaving the hole open a month together, by means of which, after two years melancholy and madness, he was delivered." (Burton.)

Celsus thus describes the operation of trepanning: "There are two ways of excising the bone. If that which is injured is very small, a *modiolus* is used, which the Greeks call '*χοινικιδα*,' if larger, the *terebra*. I will explain the mode of using each; the modiolus is a hollow round iron instrument serrated in the lowest edges; through the middle of which a pin is introduced, itself surrounded by an inner circle. But there are two kinds of terebræ (drills), one like that which carpenters use, the other of a longer little head which begins from a sharp point, afterwards becomes suddenly broader, and again proceeds to another. If the disease is within a narrow compass which the modiolus may be able to cover, that is rather fitted; if there is caries underneath (the sinus) the middle pin is introduced into the opening; if discoloration only, a small cavity to receive the pin is made with the corner of a chisel; that in place, the modiolus while turned around will not slip; afterwards it is turned by a strap as a terebra (drill) and there is method in the pressing that it may both perforate and be driven round, because if pressed tightly, it avails little, and if heavily it moves not. Nor is it unfit to drop in a little rose oil, or milk, by which it may be turned more easily, but if these (lubricants) be too abundant, they blunt the edge of the instrument. When a way has been cut by the modiolus, the middle-pin is withdrawn and it is driven by itself, afterward when the soundness of the lower part is known by the dust, the modiolus is removed. But if the disease is broader than may be covered by the modiolus, the opening must be made by the terebra. An opening is made by this (terebra) at one end of the diseased, and also at the end of the sound bone, afterwards one not far from the first, and a third, until the whole place that is to be excised may be surrounded with these holes. . . . . Then an excising chisel by a mallet, from one opening to another excises that between."

After describing minutely the depth to which the drill must go, and how to determine it, he proceeds:

"The opening being made, the middle septa are to be excised in the same manner, but much more circumspectly, lest perchance the corner of the chisel may injure the membrane until an opening be made, through which the membrane shield may be introduced, this which the Greeks call '*μηνιγγοφυλλκακα*.' It is a brazen plate, strong, turned up a little, smooth on the outer part, which being introduced so that the outer part of it may be nearer the brain, occasionally is cast under that which is to be removed by the chisel, and if it receive the corner of it, suffers it not to pass beyond, and by that the surgeon strikes the chisel occasionally with the mallet, both more boldly and more safely, until the bone being excised on all sides, may be raised by the same plate, and taken away without injury to the brain. When the whole bone has been taken out, the edges are to be scraped round and to be smoothed."

Celsus followed the Hippocratic method, which for four hundred and sixty years had been practiced almost without change; and we are thus able to see that the ancients anticipated us in these operations on the bony walls of the brain; and it is a little curious to read in the surgical text books of a comparatively recent period, statements like this from Lizars (System of Practical Surgery, Edinburgh, 1847, page 220).

"The operation of trephining has been inconsiderately proposed by Professor Dudley, of the United States, as a cure for epilepsy"; and this from Edinburgh! Old John Muys, of Leyden, in his Praxis Chirurgica Rationalis, 1685, mentions with approval incision of the dura in all cases when on removing the bone disc, nothing abnormal is seen. Heliodorus, in the first century, used after trephining, horse hair drainage, and linen gauze soaked in strong vinegar, over which, linen gauze saturated with oil of rose.

Mild antiseptic applications have long been used, the juice of the thymus calamintha, and many other aromatic herbs now known to have a certain antiseptic value. The famous balsam of Fioraventi was made of spirit distilled from aromatic herbs and resin. It is well to remember that many of these aromatic herbs were known as vulnerary plants. Wiseman, in the latter part of the 17th century, used terebinthinate dressings.

Leone, of Pavia, in 1583, drained these wounds by small pieces of wood. Acrel, of Stockholm, in 1775, reported a case of motor paralysis of the legs following a cranial injury, cured by the trephine. Benjamin Bell incised the dura for subdural abscess. Dupuytren in 1830 trephined the skull, incised the dura and plunged a bistourie directly into an abscess cavity in the brain.

But however interesting from an historical point of view, to revive these lessons of the past, we must remember that as science is progressive, so the practice keeps equal step with that progress. In the past, practice was in advance of scientific knowledge. Tradition governed, instead of history and inductive reasoning. In the modern practice of the surgery of the brain, and its envelopes, we have indeed little to offer that is new in the practice, the slightest glance at medical history forbids that conclusion, but the reasons for our methods belong to us alone; and our century, although the heir of the accumulated wisdom of ages that are past, will have more to give to posterity in solid knowledge than any half dozen centuries that have preceded it, and particularly in the matter of diagnosis. We have the surgical engine operated by an electric motor, which will turn the drills and the circular saw, and this is an undoubted advance, but the principles of operating are the same now as in the Hippocratic period.

Diagnosis.—In speaking of the diagnosis of diseases and injuries of the brain, it is without any very good reason the fashion to say "cerebral localization." Why not cardiac localization? bladder localization? or hepatic localization? The truth is that when we locate, *i. e.*, determine the *locus* of a lesion, we make a diagnosis. We cannot make a correct diagnosis without determining the seat of the disease. Why then add to the obscurity of diseases of the brain by vexing literature with a new and unnecessary phrase?

The diagnosis of injuries, abscesses and tumors of the brain is more or less difficult according to the site of the injury. In some situations there are no peculiar symptoms as yet demonstrated, from which an accurate diagnosis can be made, and the history of the case and the consensus of symptoms must be relied upon. Subdural abscesses present these negative symptoms very frequently. In pistol shot wounds of the brain, for example, there is difficulty in diagnosis because the symptoms are often conflicting and perplexing. This is obvious when we reflect that wherever be the location of the ball at the time of examination, the symptoms must be those of the lesion of the entire track traversed, even more than the pressure effect of the ball itself. The diagnosis of lesions of the motor area, of the centers of articulate language, and of the sensory cortical centers, is now well defined, but the diagnosis of lesions of the central ganglia is yet in an uncertain state. The motor cortical area has been subdivided into minute areas, each governing certain movements. The use of the ophthalmoscope in cerebral surgery has come to be essential. Optic neuritis and choked disc are found in a majority of cases where tumors are present, and the size of the tumor does not seem to increase or diminish its intensity.

Dr. H. Oppenheim, in the March number of the *Neurologisches Centralblatt*, describes a symptom which he has constantly observed in affections which have their seat in the occipital fossæ. He asserts that he observed rhythmic contractions of the velum of the palate, and the vocal cords, also in the muscles supplied by the inferior branches of the facial nerve. These symptoms were associated with cephalalgia, dysphagia, vomiting, paresis, and contracture of the left facial region, without impairment of the electrical reaction. The left extremities were externally in a state of paresis and contracture, the pulse was accelerated, there was deafness, and a tendency to fall backward on closing the eyes. This was a state consecutive to an attack of epidemic cerebro-spinal meningitis. Dr. Oppenheim observed for a period of two months these rhythmic movements (contractions) of the velum of the palate and muscles of the larynx, in a patient in whom the necropsy revealed the presence of a tumor the size of a hen's egg, in the cerebellum, with flattening of the pons and medulla. Dr. Oppenheim then came to the conclusion that in cases presenting this rhythmic motion without ophthalmoscopic lesion showing the presence of a tumor, it was rendered probable that a purulent center resulting from encephalitis is present.

To determine whether abscesses of the internal ear and mastoid abscesses are emphysematous, Dr. Benj. Ward Richardson says: "In cases of vertigo associated with noises in the head, I am in the habit of auscultating the cranium over the mastoids. When the sound is associated with cardiac murmur the bruit may be traced up the carotids and heard over the mastoids. This is increased on lying down; it is increased on exertion, and when the heart is excited, as from stimulants, a sound similar to the venous hum may be heard. It is important to make such an examination before concluding that the noises are due to disease of the labyrinth." (*Glasgow Med. Jour.*, May, 1892, from *Asclepiad.*)

Abscesses.—In no department of surgery has progress been more marked than in the treatment of abscesses, the causes of which are now definitely known. With the single exception of those produced by infected emboli, abscesses are the result of direct infection, and in a majority of instances follow aural or ethmoidal disease or traumatism. Mr. A. J. Pepper, in an article (*London Lancet*, No. 10, Vol. i, 1892) on "Disease of the Temporal Bone," ranks this after strangulated hernia and appendicitis, as the most common cause of death preventable by surgery. The dangers of temporal disease are abscess in the middle fossa, thrombus of lateral sinus and ulceration of carotid artery.

In the same number of the *Lancet* there is reported a fatal case of abscess of the brain from mastoid disease. The skull was trephined by Mr. Jalland without avail. Also in the same issue there is a case recorded by Mr. Stanley Boyd, where there was trephining performed for pachymeningitis hæmorrhagica, with recovery, and a similar case by Mr. Openshaw.

Mr. Horsley reports (*London Lancet*, No. 22, Vol. ii, 1891) a case of traumatic abscess of the left angular gyrus, with right hemianopsia and word blindness, treated by operation, but the case died from hernia cerebri.

M. Dandois, in a communication to the Royal Academy of Belgium, and published in *Bulletin* No. 8, for 1891, reported a case of trephining for abscess of the brain following an abscess of the left middle ear. He gave it as his opinion that whenever trephining and evacuation with cleansing of the cavity did not cure the patient, it was because the operation was not done soon enough, and while he recognized "that unfortunately there were sometimes insuperable difficulties in the way of making an early diagnosis, yet the ancient adage, *melius anceps remedium quam nullum*, held good here more truly than in any other cases." How closely this corresponds to the view recently advanced by the late Prof. Agnew, we shall see farther on.

Robin, in the *Gazette des Hôpitaux*, March 26, 1892, mentions the fact that cerebral abscesses are seldom found uncomplicated. Out of 110 cases he found only 22 without complication, and of 19 cerebellar abscesses there were only 4 uncomplicated. The fact is now acknowledged even by the most conservative, that consecutive abscesses require additional trephining. In February last, at the Presbyterian Hospital in Chicago, I operated upon an old man for mastoid abscess, removing the outer wall of the bone, and evacuating the pus. In three weeks the wound apparently healed, and having occasion to leave the city, I left the patient in the hands of Dr. Graham. Symptoms of cerebral disease with erysipelas developed in a day or two, and Dr. Graham re-opened the mastoid bone and made an extensive resection of the remaining bone, and evacuated supra dural pus. I found the patient again convalescent on my return in March, and he finally recovered completely. In all cases of ethmoidal abscess, abscess of frontal sinus, and mastoidal abscess, the further extension of the disease should be prevented by free drainage. This principle was well stated by Allis (*Annals of Surgery*, July, 1889) two years ago. He proposed drainage of ethmoidal abscesses by perforating the ethmoidal plate by a trocar thrust through the upper part of the nasal cavity and inserting a tube. I myself similarly drained the frontal sinus in a case at the Providence hospital in Washington, April 6, 1890.

Allis proposed this form of drainage in cranial injuries involving the frontal lobe, and also for injuries and abscesses in the middle fossa. To drain this fossa Allis chose "a point an inch behind and an inch and a half above the external auditory meatus. In the use of the trephine the chief difficulty will be to reach the dura without wounding the branches of the middle meningeal, which are deeply channeled in the bone in this region. The dura reached, it can easily be elevated and the finger carried along the roof of the petrous. The attachment, thickening and condition of the dura will indicate in some measure the progress of the inflammation, while the presence of recent lymph will betoken the presence and proximity of cerebral abscess. With the finger within the skull, and resting upon the petrous, the chisel or drill may be made to puncture the mastoid and the entire carious mass can be approached with the utmost confidence and precision. If cerebral abscess is present, the roof of the petrous can readily be pierced and through this the abscess drained. Should pus have found its way into the posterior cerebral fossa, following the course of the internal auditory meatus, then the tentorium must be detached and an outlet established by direct drainage."

Esmarch, in his new work *Chirurgische Technik* (Kiel und Leipsig, 1892), proposes to drain the frontal sinus into the pharynx, as affording a more easy conduit. But let us not forget that it was Chassaignac who in 1861 established the modern method of surgical drainage by rubber tubing and popularized it in practice.

Horner (*New York Medical Journal*, May 7, 1892, from *Arch. f. Ohrenheilkunde; Centralblatt f. Chir.*, 1892, No. 3) arrives at the following conclusions, after the consideration of the reports of a hundred cases of intracranial abscess due to aural disease, nine operations and ninety-one necropsies:

"1. Abscess of the cerebrum was found in sixty-two cases, of the cerebellum in thirty-two, in both at the same time in six. Children under ten years of age seldom suffer from cerebellar disease, on account of the great distance of the posterior fossa of the skull from the auditory meatus. Men are about twice as liable to abscess of the brain as women. The right side is affected more frequently than the left.

"2. Regarding the extension of the disease from the temporal bone to the brain, he concludes that contrary to the generally received opinion, in a very large portion of abscesses of the brain, which result from suppurative otitis and develop near the seat of the primary lesion, a demonstrable continuity with the same can be found. Therefore, in order to avoid later trouble after an apparently brilliant result, besides emptying the abscess, the diseased bone should be sought and removed.

"3. Abscesses of the brain dependent on disease of the petrous bone lie in the immediately neighboring portions of the brain in the temporal lobe, or in the half of the cerebellum on the same side. In seven of the hundred cases this seemed to be contradicted and Horner acknowledges it to be not proved, for to prove it, it would be necessary to have data regarding each case, showing that a disease of the temporal bone was present, which could cause abscess of the brain, that no pyæmia was present, and excluding any general tuberculosis and suppurative inflammation of the air passages.

"4. The information in regard to incapsulation and quality of the pus was deficient. In one case the odorless condition of the abscess which resulted from a fœtid otitis was mentioned.

"5. As complications, thrombosis of the venous sinus was found seventeen times on the right side, five times on the left; in the ninty-one autopsies suppurative meningitis was found seventeen times, rupture into the lateral ventricle ten times, into the fourth ventricle once. The frequency of the complications does not permit the conclusion that those abscesses were inoperable in their early stages.

"6. In regard to the diagnosis between otitic abscesses in the temporal lobe and the cerebellum, these points must be borne in mind: (1) The age; cerebral abscesses are three times as frequent as cerebellar in children under ten. (2) The seat of the primary bone lesion. (3) Labyrinth disease does not certainly indicate cerebellar abscess. (4) Location of painful area by percussion. (5) Pain, vertigo, and optic neuritis are uncertain signs. (6) Disturbances of speech occur only in cerebral affections, but are seldom met with on account of the preponderance of right-sided abscesses."

Injuries and Intra-Cranial Hæmorrhage.—Much of the ground has now been gone over in relation to cerebral injuries, for what we most fear as a result of injury to the cranial wall is the formation of an abscess, and it is well to remember that an abscess may follow a fissure almost as readily as a fracture. The deeper parts of the skull, *i. e.*, those most remote from the surface, are most likely to become infected, either through lack of sufficient cleansing of the initial wound, or difficulty in reaching the bottom of the wound from occlusion of its track. A review of the literature of the year on this branch of the subject is, however, interesting and instructive, and it will be seen that asepsis and drainage is the strain running through it.

Dr. John Ashurst recommends that in removing spiculæ or fragments of bone, in cases of fracture of the skull, great care must be used. The fragments should not be torn away with forceps, but be carefully separated from the dura with a knife if necessary (*International Clinics*, January, 1892).

Dr. Wyeth advises that in pistol shot wounds of the brain, where the ball has passed beyond reach, as it is liable to move about, the brain substance offering but little resistance, the patient should be kept quiet long enough to allow the bullet to become encysted (*International Clinics*, October, 1891).

Dr. Walter Beusel (*New York Medical Record*, January 16, 1892) reported a case of depressed fracture (open) of skull, two inches transversely across the middle of forehead immediately above superciliary ridges. The patient was quite sensible; on the second day had great subconjunctival hæmorrhage. Dr. Beusel removed large fragments from deep lacerations of each frontal lobe. He had difficulty in controlling hæmorrhage from longitudinal sinus, but recovery was perfect. The prompt removal of the fragments and irrigation doubtless saved the life of the patient; for that there may be few immediate symptoms in these cases, is well shown by the case reported by Dr. Edmund Burroughs (*New York Medical Record*, January 9, 1892). The patient had a basilar meningitis which proved fatal after two and a half days' illness. The unfortunate man had five weeks before received a severe blow in left parietal region, but had suffered no inconvenience till the fatal attack.

Mr. Appleyard reports a case in the Bradford Infirmary of open depressed fracture of the skull with aphasia, brachial and facial paresis. He trephined the patient, who recovered. (*London Lancet*, February 15, 1892.)

Dr. Lamphear, of Kansas City, successfully operated on a case of cerebral hæmorrhage, with right hemiplegia and a complete aphasia, October 10, 1891. He believes the time will come when the surgeon will operate for bleeding beneath the arachnoid, in the cortex, and anywhere where the ruptured vessel is not within the internal capsule. (*Daniel's Texas Med. Jour.*, February, 1892.)

Mr. Page (*London Lancet*, No. 22, Vol. ii, *1891*) reports a case which, contrary to the usual practice, escaped the trephine and recovered. There was a fracture of the skull in the occipital region, temporary blindness and several days' unconsciousness.

Schoenborn, of Würzburg, reported at the Congress of the German Surgical Society, April, 1892, a case of osteoplastic surgery after a fracture of the cranium in a young man of 18 years, who had a depression of the frontal bone. Two fragments of bone were necessarily removed, respectively measuring 5 and 6 centimetres long and 2 in breadth. The longitudinal sinus, which was wounded, was tamponed, after the removal of a small quantity of cerebral substance; and on account of a subdural hæmatoma the dura was incised. A cure resulted, and after six months, a secondary operation was made to fill the osseous breach in the forehead. Two flaps were made, one from each parietal bone, to consist of the scalp, the periosteum, and the external table of the skull, and the flaps were then brought to fill the chasm in the center of the forehead. The parietal wounds were immediately closed by Thiersch's method. Two months after the operation the patient left the hospital with the cranium entirely closed (*Archives Générales de Med.*, May, 1892).

Dr. Laplace, of Philadelphia, by a brilliant operation, removed clots from the base of the brain and the patient recovered. The patient was a boy of 10 years who while at play had fallen on a broken fencing foil. The steel had penetrated the left orbit between the inferior orbital ridge and the eyeball. The child became unconscious, with deepening coma, right hemiplegia, left facial paralysis, complete aphonia, respirations 30, pulse 140, temperature 104.5°. The wound was explored without result, and thirteen days later trephining was performed low in the temporal fossa. Laplace devised an instrument for the removal of the clots. I quote from his report:

" To reach the center of the base of the brain for the removal of the suspected clot, a miniature egg beater, consisting of four loops of platinum wire, had been improvised. This was perfectly malleable, and could be insinuated between the dura mater and the skull without wounding the cerebral structure. Having reached the cavernous groove, the instrument could be pushed no farther. It was then turned on its axis for the purpose of catching coagula in its loops. This was effectually accomplished, and about a teaspoonful of clotted blood removed piecemeal. While dragging more out, considerable venous hæmorrhage took place. The trephined opening was then immediately plugged with iodoform gauze," and the usual dressings were applied. The wound was entirely healed in three months, and six months afterward the patient had equal use of both extremities.

Dr. Laplace emphasizes "the safety of trephining near the base of the skull, the ease of arresting violent hæmorrhage from the sinuses of the dura mater, and the importance of drainage in all cases of cerebral injury." (*Medical News*, Philadelphia, Dec. 5, 1891.)

Drs. Starr and McBurney have reported a case of traumatic hæmorrhage from a vein of the pia mater, with compression of Broca's convolution, and of the sensori motor area of the cortex, aphasia, partial right hemiplegia, and hemi-anæsthesia, with trephining and removal of the clot. The patient recovered. They remark on this case:

"Trephining for aphasia is not uncommon after such injuries as fractures, blows or stab wounds in the temporal region. There are very few reported, however, in which it has been done when no external injury was present. That it is necessary to distinguish motor from sensory aphasia, and thus determine the place for trephining, and that it would be somewhat venturesome to trephine if the aphasia were only partial, are facts which require no comment. The case reported demonstrates the possibility of successful removal of clots from the cortex, and the necessity of early surgical interference. . . . ." The case also indicates the existence of tactile sensory functions in the cortex of the motor area, and thus supports the conclusions reached by Dr. Starr, in 1884, *and confirmed* by Dana and Horsley in 1888.

Dr. Andrew Smart reports, that Prof. Chiene trephined for basal hæmorrhage in a woman lying at the point of death and saved his patient. There was an antecedent injury and Prof. Chiene at first trephined at the right parietal eminence but finding the result negative, again applied the trephine lower down, and forward. The exact position is unfortunately *not stated*. There was free hæmorrhage from the membranes, but the breathing became normal, and after incising the dura there was evident relief to the cerebral pressure and tension. (*Brain*, London and New York, 1891, page 287, 288.)

Dr. A. J. McCosh reported one and Dr. Jos. D. Bryant reported one case of trephining where there existed no scalp lesion, but paralysis and convulsive seizures localizing the lesion-clot over the motor centers in the opposite hemisphere to the paralyzed side. The case of Dr. McCosh recovered. The result in the other case is not stated. Dr. R. H. M. Dawbarn reported a similar case where he failed to find the clot, but at the necropsy he found the clot on the same side as the paralysis.

Dr. T. Lloyd Wells reports a case of subdural intra cranial hæmorrhage. The patient had epileptic convulsions beginning in right eye, or right angle of the mouth, then right arm and leg, then becoming general. Trephined over left motor area. Recovery. (*N. Y. Med. Jour.*, May 14, 1892.)

Our distinguished fellow member, Dr. Jno. B. Roberts, of Philadelphia, who, in 1885, was one of the foremost in urging *more active interference* in diseases and injuries of the brain than was then prevelent, has in a recent article (*Medical and Surgical Reporter*, Philadelphia, Jan. 2, 1892), made a strong plea for conservatism. He would reject any operation unless it held out a positive hope to the patient, and he condemns what he terms "experimental operations." To prevent hæmorrhage from the scalp, which all operators know is sometimes very troublesome, he uses a rubber bandage; and he uses a trephine of his own invention, which has for its chief merit, that it is capable of being perfectly cleansed. Dr. Roberts still adheres, however, to his original recommendations, and insists without reserve on the trephining of all punctured fractures.

Tumors.—The almost constant appearance of optic neuritis in cases of cerebral and cerebellar tumors, has been already mentioned, and that they may cause epilepsy has long been known. The following case, by Dr. C. S. Bull, is instructive as showing slight neuritis and that unilateral. (*New York Medical Journal*, Jan. 9, 1892.)

The patient has had *for ten years* irregular attacks of *petit mal*, occasional lapses of memory, no headache until a few hours before death. Eight months before death, ptosis of right upper lid, both internal recti; left eye pupil twice diameter of right, unchanged for a year. In right eye, moderate neuro-retinitis. Left eye, normal. The neuritis and muscular paresis disappeared under mercurial and iodide of potassium. Next followed vertigo, then left hemi-anæsthesia, then well marked epileptic seizures. Vision right eye, 20/30. No diplopia, but greater lapses of memory, mind otherwise good. No paresis. Just before death there was terrible occipital pain, delirium and coma. At the necropsy the tumor was found in left cerebral hemisphere, 2 inches long and ¾ inch wide, reaching to within 2 inches of anterior extremity of hemisphere. The tumor involved the corpus callosum and protruded downwards from the roof of left lateral ventricle. The tumor was anterior to a vertical section through the lower ends of the Rolandic fissure.

In the *London Lancet* of Feb. 15, 1892, Dr. J. A. Campbell reports a case of hematoma of the brain, which was then supposed to be undergoing organization.

Dr. Preston of Baltimore, in an able review of the subject of tumors of the cerebellum in the *Alienist and Neurologist*, for April, 1892, expresses his opinion that while the operation for their removal is not very difficult of performance, the results up to this time *do not warrant interference*. So many of these neoplasms are malignant.

"Nixon describes (*Medical Press and Circular*, Vol. CIV, No. 9) the case of a man, aged 28 years, who suffered from attacks of giddiness, forgetfulness, and defective vision. There was a history of syphilis. Later, intense pain in the head developed, which extended around the forehead and down the neck. Paralysis of the left leg and arm followed, and double optic neuritis. Patient was dull. Control of the sphincters was lost. Trephining was performed at the right parietal eminence, as this was the former site of a suppurating sebaceous cyst, and it was thought perhaps an abscess might have developed beneath the skull. The bone was extremely dense, and a half an inch thick. The meninges were matted together and thickened. A hard cartilagenous substance was seen dipping deeply into the brain, and running forward toward the fissure of Rolando. A portion, also, ran inward toward the falx cerebri. The neoplasm was removed, and the wound treated by the usual methods. When the patient recovered *from* the anæsthetic he was quite conscious, was free from all pain, and was able to move both his arms and legs. Control of the bladder and rectum also returned. The *patient* did well for some five weeks, when a hæmorrhage occurred from the wound, which was the site of the cerebral hernia. Styptics were applied and the wound redressed. The patient became comatose, and died some hours later.

"This is believed to be the first case in Ireland in which a solid growth has been successfully removed from the cranial cavity."—*American Journal Medical Sciences*, June, 1892, p. 714.

Cerebral Injuries in the New-born.—The subject of cerebral injuries in the new born, due to pressure on the head while passing through the pelvis of the mother, and due to forceps delivery, has had some attention, but so far as operative interference is concerned, the results are negative. Dr. J. Madison Taylor has written an article on this subin a recent number of the *Annals of Gynecology and Pædiatry*.

Craniotomy for intra-cranial pressure has lately come into public notice, and I am sorry that an ill-chosen word has been applied to this operation, so recent that it has not yet found a place in a medical dictionary. I refer to the term "craniectomy." This is manifestly an incorrect term, and should be abolished before it becomes permanently fixed in surgical literature. The Greek suffix *τομια* from *τέμνω* "to cut," is equivalent to the English word incision. The suffix *ἐκτομια* from *ἐκτέμνω* to "cut out," is equivalent to the Latin word *exsectio*, or extirpation. The correct word is, therefore, craniotomy, or cranial section.

Dr. L. C. Lane, of California, has reported two cases in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, where the operation was performed for the relief of imbecility due to premature closure and microcephalis. In the first case through a saggittal incision he removed a medium strip of bone, one inch broad, extending from the anterior to the posterior fontanelle. On each side the operator removed sections of the "remaining parietal bones," "so that the excised spaces resembled a cross of which the arms were of equal length and breadth." The underlying dura was separated from the bone and protected by blunt dissector. Death resulted in fourteen hours from prostrating effect. In the second case Dr Lane states, that the exsected space resembled the letter H. The operation was performed "several months ago," and the child, which survived the operation, gives unequivocal evidence of mental improvement.

Following Lannelongue, who has had twenty-five cases, many surgeons have performed this operation, but so far without very definite results. In fact, the time is yet too short to give a positive statement as to the permanent benefit derived by the first cases; but in an extended article on the subject in the *Gazette des Hôpitaux* (Jan. 28, 1892) M. Pengrueber concludes that craniotomy may show immediate beneficial results in those cases where there are indications that certain faculties are preserved, and he cites a case in which the effect was immediate.

The operation of spinal laminectomy has been recently proposed by Mr. Tuke, as the ideal surgical treatment for the relief of intra-cranial fluid pressure. He says that "the operation which appears to me most likely to obtain thorough drainage of superabundant cerebro-spinal fluid, is laminectomy of the second or third lumbar vertebra, puncture of the loose arachnopia, and, as suggested by Mr. John Duncan, the insertion into the pial sac of small threads of horse hair. Mr. Duncan also informs me that he has lately performed the operation of laminectomy at the suggested spot for traumatic injury, that he found little difficulty, and that although the flow of fluid amounted to 8 oz. a day for three weeks, the patient recovered." *British Medical Journal*, No. 1620, p. 105. It is well known that the mortality in operations on the spinal column, decreases exactly in proportion as the operation is farther away from the cranium, and it would seem as if the suggestion of Mr. Tuke was worthy of being put to trial, in suitable cases, before performing the more radical operation of craniotomy.

In an article by Dr. M. A. Starr, *New York Medical Journal*, Jan. 23, on the cerebral atrophies of childhood, he thus formulates his views:

"When manifest atrophies are present, the operation (craniotomy) will not produce any result. When the condition is one of arrested development of cerebral tissue, it may prove of service; when clots, cysts, or tumors are found and removed, the chance of recovery is increased; when the skull is markedly microcephalic from early union of the sutures, the increased space given to the brain by the operation appears to stimulate its growth and development.

"Epileptic attacks are frequently reduced in frequency, and modified in character by craniotomy. When the opening in the skull remains covered only by the soft tissues, it appears to act as a safety valve allowing changes to occur without producing pressure on the brain.

"While hemiplegia, aphasia, athetosis and sensory effect have been relieved by operation, it is as yet impossible to predict to what extent imbecility may be relieved."

Dr. Starr very properly suggests that cases should not be reported until six months after operation. Horsley says, five years in cases of epilepsy.

Trephining for Mental Disease.—The ancient practice, abandoned doubtless for a very good reason, has lately been revived.

Sepelli, in an article in the *Alienist and Neurologist* for April, 1892, on the surgical cure of mental diseases, mentions trephining for general paralysis and says: "Shaw trephined a man who had hallucinations of grandeur, with difficulty of articulation, and who was subject, from time to time, to convulsive attacks with brief periods of loss of sensibility, especially in the limbs of the left side." Trephining was done on the right side and "considerable" subarachnoidian fluid removed. The convulsions ceased and the patient greatly improved. He quotes Crip's case, where there was general paralysis, sensory disturbances, ataxia, alterations in speech, and headache at seat of injury received a few years previously. He was greatly improved by trephining. Wagner's case is also mentioned, in which (March 14, 1890) there was general paralysis. The attack came on with a convulsion of the left side, and vomiting followed by profound coma, and paralysis. He was trephined after waiting two days. He then improved for about two months, when a second attack supervened. The necropsy showed pachymeningitis, and pus in the right hemisphere.

Burckhardt, at the Berlin Medical Congress, reported six cases of paretic dementia treated by trephining and cortical excisions, and reports amelioration in their conditions, "but it is extremely doubtful," says Sepelli, "if these cases will become curable in any degree by surgical methods."

Ray, however, in the *Jour. des Soc. Scient.* for September, 1891, concludes that the trephine may temporarily ameliorate paretic dementia.

Dr. F. J. Adams, of Great Falls, Montana, reports a case of paralysis and convulsions, cured by trephining, and as he found no abnormal conditions, he attributes the cure to the effect of the trephine *per se.*

Trephining for Epilepsy.—The journals are filled with cases like these. Dr. M., in *Medical Age*, November 25, 1891, reports a successful case of trephining for traumatic epilepsy. No fits eight weeks after. Need it be pointed out that the time elapsed between the operation and the report was entirely too short to be of any service? Almost against my will, and to satisfy a patient, I operated on an epileptic at the Presbyterian Hospital in November last. There was a distinct and connected history of a previous injury, and the usual aura. There were no distinct focal symptoms, but trephining was performed at the site of the old scar. The convulsions were arrested for some time, and the man went home to Dakota happy, but the epilepsy recurred in four months. He imagines they are "lighter" than before.

Keen and Mills report (*Amer. Jour. Med. Sciences*, Vol. cii, No. 6) a case of operation for Jacksonian epilepsy, and the removal of a tumor from the motor area. The trephine was set "1.75 inch to right of median line, in line of fissure of Rolando." The convulsive seizures began in the left arm. Seven months after the operation there was recovery of motion and strength in paretic members; "two or three" mild seizures a day instead of a dozen severe ones as before the operation. His health was better, and he had gained ten pounds in weight.

In the *London Lancet*, No. 22, Vol. ii, 1892, Mr. Alexander Miles reports two cases of trephining for traumatic epilepsy, one case improved. Mr. Pick, in the succeeding number of the *Lancet*, reports three cases of traumatic epilepsy, trephining and recovery. In only one of these cases the time is stated, and that eighteen days, so that it is only fair to Mr. Pick to assume that when he says "recovered," he means that the patients recovered from the operation.

Tansini, *Gazetta Med. Lombardi*, January, 1892 (*Brit. Med. Jour.*, March 5, 1892), reported two cases of trephining for epilepsy. In the first case there was no history of traumatism, but there was a marked projection in the neighborhood of coronal suture on right side, behind which, running in a transverse direction, there was considerable depression in which the pulsation could be distinctly felt. These lesions were in the situation to account for the motor and sensory symptoms, and were considered by Tansini to justify the operation. No lesion on the surface of the brain was discovered, and at last reports the patient was having convulsive attacks, although lighter than formerly, and his disposition is supposed to have been improved by the operation. The other case, a girl, had tonic and clonic spasms following an injury to the skull with depression of the bone. In this case also the attacks returned.

There were many more of these cases reported during the year, but I think it will be conceded that they are far from satisfying one as to the propriety of continuing the operation. It may be that by a careful selection of cases, and the use of the electric current when the convolutions are exposed, we shall be able to produce better results. The use of electricity to determine the exact portion of convolution to be removed, was first proposed by Horsley, who at the time asserted that the use of antiseptic solutions might interfere with the successful application of the electric current. To obtain the effect, two delicate electrodes about an eighth of an inch apart are applied directly to the exposed cortex and passed over it until the portion is found which produces the spasm in the muscles corresponding to that initiating the convulsion.

The late Dr. D. Hayes Agnew, whom we all lament as having passed away since our last meeting, read an article "On the Present Status of Brain Surgery," at the September meeting of the American Surgical Association. This exhaustive paper covers the entire ground. He concurred in the dictum of Mr. Horsley that it was not proper to call a patient cured until five years after the operation, and he concluded that traumatic epilepsy is practically incurable by surgical operations, and that a considerable number of such cases had better be relegated to the domain of medicine. He held that traumatic epilepsy should be *prevented*. I quote his language.

"The doctrine that depressed fractures of the skull without symptoms required no operative interference, a doctrine which in the past has been so deeply rooted in the professional mind, I hold to be responsible for many, very many of the unfortunate sequels of head injuries. However small may be the depression which follows a fracture of the cranium, save in one or two localities, it will encroach enough upon the dural nerves to cause more or less irritation; though insignificant at first and not at all recognizable to the consciousness of the patient, yet eventually that irritation will be propagated to the meninges, and the ganglia, until finally the paroxysmal explosion occurs; and then, even when the initial lesion is removed, the slowly established habit, created by years of excitation, will remain as an ineradicable legacy. No amount of foresight can determine what happens to the inside of the skull after the reception of an injury by any inspection of its exterior surface; the physical properties of the two being so very unlike. Whenever, therefore, in my judgment, the profession can accept the doctrine that all depressed fractures of the cranium, however slight may be the depression, and entirely independent of pressure symptoms, are proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases; indeed I am sure that he who shall propose to tabulate at the end of the next 25 years the cases of traumatic epilepsy will find as compared with the present time a meagre supply for his purpose."

In Jacksonian epilepsy, Agnew says the presumption is against a permanent cure by operation, and he based this view "not simply on the history of recorded cases, but on the changes which must necessarily follow the excision of cerebral matter, that for example, which results from pressure of reparative cicatricial tissue." The Gussenbauer case, where epilepsy followed the evacuation of a cerebral abscess, is mentioned to sustain the point. In concluding his rather pessimistic paper he gives the following deductions:

"1. That all fractures of the skull attended with depression, however slight, and entirely irrespective of symptoms, should in view of the late after effects, be subjected to the trephine.

"2. That trephining for traumatic epilepsy promises only palliation at best.

"3. That trephining for Jacksonian epilepsy is to be regarded as only affording temporary benefit.

"4. That trephining for abscess, in view of the fact that all such cases left alone almost invariably terminated fatally, is entirely proper, and that the earlier such operations are done the better.

"5. That trephining for intra-cranial hæmorrhage is both imperative and a highly promising operation.

"6. That trephining for cephalalgia or traumatic headache, medical measures having failed, should be undertaken with every prospect of success.

"7. That trephining for hydrocephalus is a useless operation.

"8. That trephining for microcephalus independent of athetosis, confers no credit upon surgery.

"9. That it is more than probable that as our observations multiply, the sphere of the trephine as a preliminary measure for the removal of brain tumors will be lessened rather than amplified."

In the discussion which followed the paper, there was a general dissent from the conclusions as too pessimistic; but Dr. J. J. Putnam in the *Boston Medical and Surgical Journal* for January 7, 1892, viewing the matter from a purely neurological standpoint, sustains in effect most of Dr. Agnew's conclusions, and thus formulates his own views:

1. "The causes of epilepsy are numerous, and we cannot hope in most cases to remove them all by early trephining and care of the wound, though these measures and especially the removal of fragments are probably very important.

"2. The local and the general injury of the brain are probably of prime importance as causes of epilepsy, and are to some extent independent of fracture. The former may perhaps sometimes be treated as suggested by Keen, but the latter can only be reached by general treatment.

"3. The treatment of the general condition of the brain, by cold and by prolonged absolute mental rest is probably of great importance, and might perhaps be reinforced by other measures directed to the same end.

"4. The occurrence of localized convulsions or auras does not necessarily indicate limited local disease to be removed by operation, since on the theory that the disease is a general one it would have to find some local expression. It is especially true that convulsions or sensory aura beginning in the hand or face are untrustworthy indications of the extent of the cerebral lesion, because the cortex corresponding to these parts has a high degree of irritability.

"5. Considering the long period that usually elapses after an injury to the head before epilepsy declares itself, a period during which the patient may be perfectly well, it is reasonable to seek for some better term than 'local irritation' to express the connection between the two events. We may fairly suspect that in most cases a degenerative process goes on which increases in extension and perhaps in intensity; sometimes a neuritis starting from the seat of injury seems the important link."

It will be seen that there is not substantial accord on this subject in all countries; they are decidedly more radical on the Continent of Europe. The following are the conclusions of a memoir by M. M. Leonte and Bardesco (*Rev. Chirug.* Paris, 1891, Abstract in *Jour. de Med.*, No. 10, 1892):

"1. Trephining is a comparatively harmless operation when done according to modern antiseptic methods. The doctrine of cerebral localization has multiplied its indications and rendered it frequent.

"2. Intervention is justifiable in cases of paralysis or convulsions when these are due to organic irritation or to function destruction of encephalic center.

"3. Special note should be taken as indication for operation not only of the motor, but also of the subjective sensory and sensitive disorders, since these signs afford instruction as to the locality for operation. *a.* The operation is indicated in cases of symptomatic convulsions or paralysis. *b.* In essential epilepsy the operation is empirical and its results difficult of appreciation. Nevertheless, trephining may be performed *in extremis* and for exploratory purposes.

"4. The earlier the operation is performed and the nearer to the first appearance of the nervous symptoms, the more assured will be its success. The success of the operation depends also upon the age of the individual, and from this point of view it may be said that there is an inverse ratio between the age and the success of the operation.

"5. When monoplegia exists with the convulsions, which happens with serious organic or functional lesions of the brain, trephining is formally indicated; its success depends in these cases upon the length of time the symptoms have existed. The appearance of the trouble after the operation does not destroy its value when it is delayed.

"6. Repeated operations on the same side or alternately on the two sides, the making of large openings in the cranium and extensive incisions in the meninges, are justified by the principle of surgery 'complete work'.

"7. In conclusion the results obtained up to the present time from this rational and scientific operation in the medico-chirurgical disorders of the brain are satisfactory enough to lead others to continue in this direction."

In regard to the treatment of epilepsy, Dr. Sachs in the *New York Medical Journal* for February 20, 1892, says: "What can we expect from the surgical treatment of epilepsy?"

"Simple trepanation seems to be more successful in these epilepsies associated with infantile palsies than in the traumatic forms, probably because of the still greater frequency of cysts in these cases than in the traumatic forms. Forty-four per cent. of all cases of infantile paralysis develop epilepsy. Of all cases of epilepsy a very fair proportion were developed in connection with infantile palsies. As soon as epileptic symptoms appear, the paralysis has the value of a focal symptom. In children excision of a center is a less serious affair than in the adult, for in the former, other parts of the cortex are capable to a greater degree of assuming the functions of the destroyed part. Under favorable conditions the surgeon may be able to cure a few cases of epilepsy. He will be able to improve many."

It will, I think, be apparent that there are now theoretical statements enough; what is needed to clear up the matter more than anything else, is time to observe cases reported as cured.

Operations on Cranial Nerves.—It is perhaps scarcely within the scope of this paper to enter exhaustively into the literature of the year on the topic and yet I cannot close without reference to the operations of Rose, Horsley and Andrews on the Gasserian ganglion for the relief of chronic neuralgia, and of Fletcher, *Journal Nervous and Mental Diseases*, May, 1892, of trephining for the relief of paralysis of third nerve, and the excellent paper of Dr. Frank Hartley, on Intra-Cranial Neurectomy of second and third divisions of the fifth nerve, *New York Medical Journal*, March 19, 1892. His operation is on entirely different principles from either the Rose or Andrews operation, as will be seen.

"An omega-shaped incision was made, having its base at the zygoma. The curved and rounded portion of the incision reached as high as the supratemporal ridge, diameter of said circle being three inches; the tissues were then retracted and the periosteum divided upon the bone in the same direction and as far as the straight part at the base. With a chisel a groove was cut in the bone corresponding to the divided periosteum. This groove went to vitreous plate, except at the upper angle where it included the vitreous plate.

"A periosteum elevator was here inserted and used as a lever to snap the bone on a line between the ends of the circular incision, giving a flap consisting of skin, muscle, periosteum and bone. The exposure of first, second, and third divisions of the fifth nerve, and of carotid artery and cavernous sinus, was exceedingly good."

In closing this long review, perhaps over-burdened with quotations from accessible authors, I have to say in extenuation that the transcendant importance of the subject is my only excuse; and I could think of no better way of fulfilling the duty assigned me than by grouping our recent authors in such manner as would set forth their views as nearly as possible in their own language. It will be seen that while there has been a distinct gain in many branches of cerebral surgery there is yet very much to be perfected, but all this wonderful advance is directly due to the great discovery of Pasteur, and the practical genius of Lister. Antiseptic methods have alone made advance on the old lines possible. The Rip Van Winkle of the profession may well rub his eyes and quote the lines of Macbeth:

> The times have been; that
> When the brains were out,
> The man would die and
> There an end; but now they rise again.

ADDRESS ON GENERAL MEDICINE.

Read before the American Medical Association, at Detroit, Mich., June, 1892.

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In accepting the invitation to fill the breach caused by the illness of your appointed speaker on general medicine, I can but feel that I have imprudently undertaken a weightier task than, at the time, I fully realized. The very flattering terms, in which the appeal was conveyed, left me no option to decline, and blinded me to the responsibility I was assuming in agreeing to address this great body of experts in medicine on the vital issues involved in the address expected. Hence, I can only ask your indulgence for my shortcoming in begging you, who lead busy lives, to reflect how impossible it is to do in a few short days, what is, rightfully, the careful deliberate work of preparation for a whole year. What I say, therefore, shall only be in the way of desultory comment on medicine in general, instead of a systematic digest of the year's achievements in the practice of our art.

To me the most gratifying outcome of the year is not the announcement of new therapeutic means, nor the publication of nosological novelties. With these, you are more familiar than I am, for the search-lights of the medical press now leave no dark corners where men may dig and delve for hidden treasures, with which some unexpected day to startle the world and bring them fame and fortune. He, who works to-day, stands in an amphitheater with the whole profession looking and listening, condemning or commending, through their accredited representatives, the fraternity of medical publicists of every nation; and here, as your reporter of the doings of the year, I find it my pleasant duty to congratulate the profession on the higher standard of medical editorship, which is becoming our national characteristic. Fervid ambition still impels tyros in authorship to engender premature offspring, but as with all man's progeny only the fittest survive, we have a body of stalwart adult and veteran periodicalists, who do their work of enlightenment masterfully, and in friendly concurrence. If there be any in this assembly, who have not studied these living text-books of our science, day by day, during the past year, how idle would it be for me to seek to cover their indifference and neglect with the veneer of a twenty minute random résumé of a few prominent occurrences. Perhaps, I can perform part at least of the duty imposed upon me, in no more practical way, than by seeking to awaken in the medical body politic a livelier consciousness of some of its obligations outside the routine duty of the general practitioner. One of these obligations is the earnest countenance and substantial support of its organs of intercommunication, —not merely by subscribing for them but by contributing to them the results of individual observation, experience and research that all mankind may profit by them. Only with such generous and general support, can any medical editor, independently and impartially, fill his waste-basket with the crudities and spurious offerings that are poured upon him and thus become the censor and preceptor the press assumes to be. Eminent distinction in medical as in secular journalism is the reward of pronounced merit. Its office requires the highest order of ability, the broadest culture, the widest range of information. If other specialties be the hands and eyes of the profession, this is the silent thinking brain, which in the vaulted attic away from active participation in the world's affairs, reflects the impulses which go to make up active life. Without statistics of circulation, I am confident it would be found, as indicating intellectual progress in medicine, that medical periodicals are more widely read and their contents more carefully scrutinized, while their editorial leaders, notes and criticisms are more independent, fearless and unbiased. It is enough to enter a physician's office and scan the periodicals (for there should be more than one) upon his table to judge his own mental and professional development.

But if a higher order and wider circulation of current medical literature be indicative of the better self-instruction of the adult practitioner, we have reason to congratulate ourselves upon another sign of the medical progress of the day in the reform of the system of scholastic education of the young entrants in the profession. It is not necessary to detail here what has been done in this direction. The medical press has fully recorded, while it has advocated and encouraged, the advance from the old two full courses, dove-tailed with nominal three years' office instruction, of our early days, to the splendid system that finds its fullest expansion in this current year. A minimum of three full courses, in many schools four, and these consequent upon prerequisite academic or collegiate tuition, expressed in one university, in no unmistakable terms, as six years of continuous college tuition for the intending physician, is a prouder achievement in medicine of this year 1892, than all the additions to its pharmacopœia or all the refinements of its therapeutic theories. The seven grave and reverend professors of our school-days sit still enthroned on their several chairs but on loftier eminences, for surrounding each are other seven and more, to aid them in the tasks which have outgrown their own individual capacities. College faculties have grown apace with medicine—and twenty, forty, sixty, more than a hundred busy teachers stand ready to fill with oil the lamps of those who would see far into the mystery of this human existence. All the schools have not gone thus far, nor are all the periodicals such grand exemplars as make their own abilities the sole measure of what is fit or unfit, but there are enough of these great beacon-lights in the north and east, at the fountain heads of our science at the metropolis and at that old Quaker City where medicine was early dignified—in the west and at the farthest south to attract within the glory of their brightness, all whom it were worth attracting. A few years more and it shall come to be an opprobrium not to have been a graduate of one of these real schools of medicine. That this fulfillment may be hastened, it becomes the duty of every member of this body—which should be every member of the profession—by reason of his own lack of early opportunities—by the years he has had to sacrifice to accomplish what he may have done and often superlatively well done—by his own comprehension of the sublime greatness of this unrivaled science of medicine, in which, however old we may be, we can have traveled but a little way, to bear testimony of his appreciation of the increasing immensity of the task devolving upon those who succeed us, and to guide these successors of ours where the light is brightest, the road broadest, and the far off end ever clear in view. He shall serve medicine best, who shall see that the young laborer is best equipped for his life-work by natural aptitude, by proper preliminary training, and by a thorough understanding, that light and wide and straight as the way may be made, it is long, toilsome and uphill before the highest eminence be reached—beyond which still the over-hanging firmament ever defies approach.

But a medical man has not done all his duty in supporting, contributing to and digesting one or more medical periodicals, however able and meritorious, and in advocating schemes of higher medical education. The physician ought not to isolate himself from active participation in the affairs of the community in which he lives, nor of the guild to which he belongs. He should manifest his pride in his vocation by encouraging the congregation of all who share it with him in professional societies, both after the American system of municipal, county, State and National organization, and in the special association of those of distinctively kindred pursuits—and this not in the trade-union spirit for mere mercenary ends—but to promote harmony, good-fellowship and mutual improvement of men engaged upon the self-same work. While it is not always feasible to leave home and occupation to attend the annual reunions of the great national bodies, it is within the power of every physician to gather together with his professional neighbors—be they but two or three—in friendly concourse. In this American Medical Association, are now enrolled about five thousand members and represented about three hundred and fifty societies. Its membership ought to comprise the entire medical profession of America, undivided by schism or sectional interest, and its representation embrace every State and minor body in the country, with such modification of plan, perhaps, as may bring it more in accord with our American idea of *e pluribus unum.* Without advocating any particular method of accomplishing this object, I only now desire to point the injunction that every graduate of medicine should be in active fellowship with one or more medical associations, whether for individual improvement, friendly intercourse or social example.

Nor should the pendulum swing too far one way. The doctor should not be only a doctor—else he be deemed in truth the leech of the caricaturists in semi-clerical garb with pompous air and gold-headed cane, or the olive colored garment and æsculapian badge by which, in recent years, it has been gravely proposed to distinguish him. Social example has wider field than the assembly-room of a medical society. The physician should be the first citizen of the commune, peer in education and culture with its highest classes, and leader in all the sociological and political movements of the day, and this without abating one jot his professional character or neglecting any whit his professional duties. To the young medical man who listens to me, or who may read my words, I would point as the splendid example of the learned physician, who was the exemplary citizen, the active philanthropist, the busy man of the world and jovial companion, as well as the greatest teacher, lecturer, writer and practitioner of medicine which this country has ever produced—Benjamin Rush—and say, seek to be worthy and useful, honored and respected as he was. Do not bound your horizon by the walls of your office nor limit your intercourse with your fellow men to interviews with patients and consultations with brethren of the cloth. Everywhere may be seen the first men of the profession sacrificing social amenities and indulgences and the companionship of their friends and families upon the tread-mill round of office and clinical labor, knowing neither pleasure nor relaxation until the end comes when the statistician records another unit in the class of early death rates. In mental occupation, at least, the physician should be omnivorous and polygamous—in the world and of the world—loyal above all to medicine as his first love, but not blind to other beauties nor deaf to other harmonies. The medical fraternity is singularly reclusive, yet with strange inconsistence chary of hero-worship, if its heroes be its own. During the Civil War, it was not excelled in loyalty and patriotism. Two of the founders of the Military Order of the Loyal Legion of the United States were medical men—one happily still with us—and the Grand Army of the Republic was the sole creation of another. The posts of the latter and the commanderies of the former have their full quota of M.D.'s, many who had gained their brevets as commanding officers in the field, as well as those who with equal peril and personal bravery rendered their humane offices to stricken comrades. Yet even these men generously applaud successful generals and remain silent when their own confrères ought to be extolled. Within a month, I have seen physicians actively canvassing for subscriptions for statues to great military leaders, who have never contributed one dollar to the monument to their own immortal hero, who signed the Declaration of Independence at the peril of his life, who as a member of the Continental Congress braved attainture as a rebel, and who breathed the breath of life into the figure of the new Republic, whose Constitution he had helped to frame, who died as he had lived, booted and spurred, with face to the foe, from whom he was striving to protect his fellow-men. This is not the time for me to enlarge upon this strange anomaly of indifference. Besides it is a sermon I have often elsewhere preached, sometimes, I fear, to unwilling ears.

The intellectual progress in medicine, to which I have alluded as the laudable characteristic of our day, has naturally led to the recognition of preventive medicine as the type of highest medicine, and the fact that I am so committed to this belief made me hesitate to assume the *rôle* of your annual reporter, lest I trench upon the ground of my friend Dr. Lindsley, for one cannot speak of medicine in this day, without having first of all before him the problem, how can this disease be best averted, which it is our later office to combat? and the more we learn of the nature and cause and history of disease, which the brightest minds are now studiously investigating, the more urgent becomes this problem. I can therefore shield my own delinquency behind the assurance that the address in State Medicine which is to follow, shall cover this very ground.

The discovery of this or that microbic cause, or coincident or inevitable consequent of cause, of one disease after another, naturally led to the deduction of special germicidal agencies for each, and for a time, there was an appalling prospect of preventive hypodermic tattooing, scarcely less repulsive than the disease, and a bravado resolve to let each particular microscopic devil do its worst. Multiplying a million a minute, it was realized that we could be no match for our Lilliputian enemies, whom we could not kill by drugs without at the same time killing ourselves. Apace with the bacteriologists' revelations have been the chemists' syntheses, which, however we might be disposed to recommend to our friends and patients, none of us were brave enough to care to take within our own economies. I confess to no intimate familiarity with these latest evolutions of the laboratory, though the names of some I know by sight very well, even if most of them I neither can speak and neither can spell. Hence it was a gratifying announcement that we had within ourselves our own defenders and defenses. "In the blood is the life thereof" began to have greater significance through the belief that its living cells devoured these countless swarms of intruders, and thus prevented their disastrous inroads. It was enough for us, then, by tonic and alterative, and stimulant and corroborant, to preserve the appetites of these domestic phagocytes, and see that they were always in sufficient force to patrol the avenues of the circulation. So, the homely phrase of cleansing the blood of its impurities came back like an old friend in a new dress—but already we are called upon to abandon our bio-therapeutics, with its war of the microbes and the final victory of good over evil-minded bacteria, as poetic fancy, and now comes the chemist with potencies, that are marvelously alike in looks, which set sail on their mysterious voyage in the channels of the blood to neutralize the toxic products of each malefic monad.

Among the pleasantest recollections of my early life are those of my old preceptor, whose father, himself a favorite pupil of Benjamin Rush, had conferred the latter's name upon his own son, which doubtless explains my inherited admiration for that wonderful man. I recall how carefully I was indoctrinated with the belief, which I have not been over-ready to abandon, that nosological nomenclature was a treacherous guide, that diseases were not so many entities for which specific antidotes were to be sought. and that the cardinal points of diagnosis to guide the medical pilot were the grade of action as indicated by the pulse, the state of the secretions and the condition of the organic fiber. To-day, we go behind these with lens and test-tube to ferret the particular microbe, bacterial proteid or chemical toxine, which has disturbed the circulation, obstructed the flow of the secretions, or irritated, inflamed or disorganized the basis structure of the tissues.

It would be unpardonable, therefore, in an address on medicine, however cursory and superficial, that should neglect to give due credit to the bacteriological investigators, the scope of whose researches embraces not merely the discovery of disease causation, but the means for its prevention and cure. The busy practitioner, perhaps, has little time to follow diligently the discussions as to whether the bacteria themselves are the real enemies to health, or only the agents for the introduction of their proteid products or toxalbumins, ptomaines or other chemical toxines, which are the actual pathogeners. He is chiefly concerned as to the practical results of these investigations, and I am fortunately able to lay before you the very latest precise knowledge on this subject, as set forth only a few days ago by that master in this branch of science, my highly esteemed friend of many years, Lieutenant-Colonel George M. Sternberg, Surgeon United States Army, before the Association of American Physicians at its annual meeting at Washington. I esteem it a high privilege that I am permitted to transmit to you this authoritative statement of the practical results of bacteriological research.

Until a very late day, admits Sternberg, the bacteriologist's demonstration of the specific cause in a considerable number of infectious diseases had not resulted in the discovery of a specific treatment for these diseases. Preventive medicine has almost exclusively profited by his researches, as when the discovery of the bacterial parasite placed tuberculosis among the infectious diseases and the destruction of the sputum became a recognized practical necessity. Of the same order are the precautions of modern aseptic surgery and obstetrics, and the use of antiseptics in traumatic infection and in localized infectious processes. The use of the microscope in the early diagnosis of tubercle and diphtheria is a practical result for which the bacteriologist can justly claim credit, as well as the protection of domestic animals by inoculation largely practiced in France, and the prevention of rabies in the human subject, even though the specific infectious agent has not been demonstrated.

The chief purport of Doctor Sternberg's valuable paper (which, perhaps, it would have been well for me to have read *in toto* in lieu of anything else). was to present certain late discoveries, which suggest the possibility that we are on the eve of a new departure in the specific treatment of infectious diseases. Sternberg has described 475 species of bacteria of which 158 species are pathogenic, although all are not differentiated by morphological characteristics, and the latest discoveries have established the fact that the pathogenic action of those bacteria, which have been shown to be concerned in the etiology of specific infectious diseases, is due to the formation of toxic products during the active development of the bacterial cells, and to isolate these toxines and toxalbumins is now the attempt.

Recent experimenters, significantly prominent among whom were three Japanese biologists, having demonstrated that the blood of an animal having a natural immunity against anthrax if injected into the body of a susceptible animal, protected the latter from anthrax, it was subsequently found that the blood of animals having an artificial immunity against tetanus or diphtheria injected into susceptible animals, in like manner, protected them against the effects of the injection of virulent cultures of the bacilli of tetanus or diphtheria, and finally Doctor Rudolf Schwarts, *assistant to the surgical clinic at* Padua, reported the actual successful treatment of an advanced case of traumatic tetanus by injections of *tetanus antitoxine* obtained by Professor Tizzoni from the blood-serum of a dog, which had been rendered immune against tetanus, and three other cases of success with this same treatment elsewhere, have been since reported.

Since Behring's experiments, in Sternberg's opinion, suggest the possibility that the potent toxalbumin of the diphtheritic bacillus may be neutralized in the bodies of infected animals, and the Klemperers *having shown the probability that the blood serum* of animals which have an artificial immunity against cultures of *micrococcus pneumoniæ crouposæ*, when injected into other susceptible animals, renders them immune, Sternberg indulges the hope that croupous pneumonia in man may be arrested by a similar mode of treatment. He further says, from analogy, based upon experimental evidence, the successful treatment of tuberculosis appears to call for the administration of *anti-tuberculin* rather than that of the active toxic principle elaborated by the tubercle bacillus. Animals which have an artificial immunity against rabies, as a result of the inoculation with an attenuated virus, owe this immunity to the presence of an antitoxine in their blood or tissue-juices, and Tizzoni and Schwarts, in January of this year, stated their belief that the antitoxine of rabies may probably be substituted for Pasteur's inoculations with an attenuated virus, not only with the object of preventing the development of rabies in man after the bite of a rabid animal, but also that it may prove to be curative after the symptoms of rabies are developed.

Erhlich's experiments with pathogenic toxalbumins not produced by bacteria, but of vegetable origin, Sewall's showing that immunity from poisoning by rattlesnake venom may be produced by injection of small doses of its toxic agent, and others give strong support to the view that all infectious diseases are due to the action of substances resembling the toxalbumins already discovered, and that acquired *immunity from any* of them is due to the formation of antitoxines in the blood of the immune animal—but while in many infectious diseases the toxalbumin is produced by a specific microörganism, we have no evidence that this is the case in the strictly contagious eruptive fevers, and none to justify a generalization that all infectious diseases, as small-pox and scarlet fever, are due to specific microörganisms. Sternberg suggests the possibility that in these diseases the toxalbumin, which gives them their specific character, is a product of the living cells of the body of the infected individual, and says the inference is justifiable that the blood and tissue-juices of any individual who has recently suffered an attack of small-pox or scarlet fever, contains an antitoxine which would neutralize the active poison in the circulation of another person immediately after infection, and he holds the experiment warrantable to ascertain whether a small quantity of blood drawn from the veins of the protected person would suffice to arrest or modify the course of these diseases. The transfusion of a moderate amount of such blood might be curative or confer immunity in advance of infection, and possibly an antitoxine may be obtained from the blood of vaccinated calves, which would have a curative action in small-pox. Dr. Sternberg has himself demonstrated, by recent experiments with the blood of vaccinated calves, that there is *something* in this blood which does neutralize the specific virulence of vaccine virus, both bovine and humanized.

I can hardly close without a passing reference to the malady which is on every tongue, and is credited with the virulence of a plague—the influenza—the influence whose mysterious grip upon the physically *strong and robust, as upon the feeble and frail*, leaving all alike mentally and bodily prostrated, has been attributed to some occult cause, acting upon or through the nervous system. It too is now known to have its *bacterium, the latest microörganism to be discovered*, unless the verification of the Berliner Hospital experiments shall give that distinction to the alleged bacillus of measles. The bacterial proteid of influenza has not yet been isolated, and when it is, and its antitoxine shall be demonstrated and successfully administered with curative results, a new era shall indeed have begun in general therapeutics.

Certainly, when prevention and cure shall go hand in hand, the high estate of preventive medicine can never more be questioned, nor that the wise physician's higher office shall be to guard this glorious human body—the crowning work of the Divine artificer—against these enemies from without, rather than wait to undo their malefic work. If we can not construct the simplest living cell, how can we hope to intelligently reconstruct one?

Granted this, when disease does invade the body, whether by neglect or ignorance, or deliberate defiance of nature's laws, shall we idly contemplate the evil and do nothing to mitigate, if we cannot wholly eradicate it? While the world endures, man's folly, as well as woman's, shall furnish work enough for practitioners of the healing art, both general and special, and to them a word of felicitation on their share in the progress of medicine towards a higher level.

The intelligent general practitioner is the intellectual primate in our profession—not a mere man of all work, ready to do any job after a rude fashion, without much understanding of its rationale. Nevertheless, however universal may become the requirements, and opportunities and results of higher medical education, it can hardly be expected in this land of unlicensed liberty, that the class of medical tradesmen can ever be entirely banished, and it may be necessary to establish distinctions, as in other countries, even if it be to surrender to them the all-comprehensive title "Doctor." Medical examining and licensing boards are the coarse sieves which do the preliminary sifting, but medical associations must, perhaps, become the means, which shall ultimately determine by rigid requirements of fellowship, which are the men who stand upon the same level, and this the higher one—and this very high level is what has given necessary occasion to specialism. The expert specialist is the natural aid to the expert general practitioner—his ally, not his opponent and rival, the body of specialists being the planetary attendants upon the central luminary, which animates and impels them, and only subordinate in that each revolves without interference in its appointed orbit, the whole making one system. That this dignified and exalted recognition of the correlation and reciprocal dependence of the several parts of our profession is coming to be the general understanding is, I think, our greatest reason for self-satisfaction at this time.

ORIGINAL ARTICLES

REPORT ON ABDOMINAL AND PELVIC SURGERY.

Report of the Chairman of the Committee on Abdominal and Pelvic Surgery, read before the Kentucky State Medical Society, May 6, 1892.

BY WILLIAM H. WATHEN, M.D.,

OF LOUISVILLE, KY.

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REPORT OF THIRTY-ONE SUCCESSFUL LAPAROTOMIES.

(Concluded from page 696.)

In reporting the following cases I will omit many of the minor details. All of these operations except one were on intelligent private patients, and most of them at St. Joseph's Infirmary; they were seen by some of our most reputable physicians, and my chief assistant was usually either Dr. J. M. Holloway or Dr. F. W. Samuels, and the anæsthetizer Dr. Henry Orendorf.

Case 1.—Mrs. W., from New Haven, Ky.; aged 32; married fifteen years; has never been pregnant; was referred to me in the fall of 1889. A few months after marriage she had pelvic peritonitis and has since been an invalid, frequently suffering intense pain in the uterus or its adnexa, especially severe at the menstrual period. She has been treated by many physicians with but little temporary relief. The body of the uterus is pressed against the bladder and is not freely movable, but no enlargement of the ovaries or tubes, or pelvic exudates can be detected. Having treated her for six months with but little benefit I did a laparotomy May 25, 1890. The right ovary and tube were adherent to the back of the uterine body, and the pouch of Douglas was practically obliterated. The adhesions were relatively elastic, but so tough that it was difficult to dissect off the ovary and tube so as to ligate and remove them. The cavity of the tube was obliterated, and the ovary had no follicles. The left ovary and tube were not removed. There was considerable oozing of blood, and a drainage tube was used for two days. Recovery was uninterrupted, and she has had no pain at any time since, although menstruation has been regular. Before the operation she was never free from pain which was made very severe by walking a few squares; now she is able to walk several miles without immediate or subsequent inconvenience.

Case 2.—Mrs. B.; Louisville; aged 35; widow with no children. She has had a tumor in the pelvis and lower part of the abdomen for several years which causes menorrhagia, and such severe pain at each menstrual period that she is confined to bed for two weeks. We diagnosticated uterine fibroma the size of a child's head, with adhesions. She was not improved by treatment, and on May 24, 1890, an abdominal section was done, the adhesions separated, and tubes six inches long and the size of a large pencil, and ovaries three inches long, were removed. She had no untoward symptoms, and has been comparatively well, with no return of her menses. She is now able to attend regularly to all her domestic and other duties.

Case 3.—Mrs. L.; Louisville; aged 28; married, and has several children. Has been an invalid, and often suffered severely, for several years. Uterus pushed to right side, immovable, with a tumor firmly attached to it on left side the size of a goose egg. A laparotomy was done on May 6, 1890, the tumor separated from its adhesions, ligated and removed. It was wedged in the pelvis and everywhere adherent except the upper surface. There was considerable oozing and a glass drainage tube was used for three days. On the third or fourth day she had a temperature of 102°, but otherwise made an easy recovery and is in perfect health. The tumor was dermoid, nearly solid, and full of hair and sebaceous matter.

Case 4.—Mrs. P.; near Elizabethtown, Ky.; aged 44; married and has several children. Her abdomen has been enlarging for over a year and is now so distended that the pressure interferes with breathing; she has lost flesh rapidly and is greatly emaciated and very feeble, with bad digestion and a pulse over 100. The enlargement of the abdomen is ascitic, but in each ovarian region there is an adherent growth the size of a large orange. A laparotomy was done on August 1, 1891. The tumors were wedged in between the uterus and the pelvic walls and ascended above the plane of the superior strait. They were extensively adherent, but the adhesions were easily separated, and the tumors ligated and removed. They were beautiful specimens of papillary degeneration of the ovaries and had a malignant appearance. There was considerable oozing. The cavity was thoroughly irrigated with hot sterilized water and a glass drainage tube used for three days. She had but little shock, took no opiate, passed her water, had no untoward symptom and returned home, a distance of seventy-five miles, in two and a half weeks. She has regained her flesh and is now well. I was afraid there would be a return of the disease, for papillary degeneration of the ovary is often malignant, or semi-malignant, which cannot always be decided by a physical or microscopical examination.

Case 5.—Mrs. S., Paducah, Ky.; aged 35; married fifteen years but has no children; has suffered for many years with pain in the ovarian region; menses regular but profuse and painful. Has had some form of insanity for several years which her husband and friends believe to be caused by disease of the generative organs. She had been examined by several of the leading surgeons of Dayton, O., and of Springfield, O., but I did not learn that any tumor in the pelvis had been diagnosticated. Two years ago she was confined in a lunatic asylum for nearly a year, during which time her mental condition improved and she was allowed to return home, but very soon she relapsed into her former condition and has gradually grown worse. She is now positively insane, and I had to keep her at St. Joseph's Infirmary for ten days before she would allow me to make a physical examination. The uterus is a little enlarged and practically immovable, with a tumor on each side the size of a goose egg. A laparotomy was done November 16, 1891, and a pedunculated fibroid tumor was removed from the left side of the uterus, and an imbedded broad ligament cyst from the right side. A glass drainage tube was used for three days; she had no untoward symptom, the temperature and pulse remaining about normal, and she was sitting up in two weeks. When she had fully recovered from the effects of the anæsthetic and during convalescence there were no symptoms of insanity, but when her menses returned a little later she had some mental disturbance for two days, much milder. however, than before the operation. I have not seen her since but am told by her sister that she has had no insanity except a mild form at each menstrual period. Otherwise she is well. It would probably have been the correct thing to have removed the ovaries and tubes.

Case 6.—Mrs. N.; Louisville; aged 35; married and has one child 18 years old; consulted me in August, 1891. She has menorrhagia and profuse leucorrhœa, with severe pelvic pain, and is quite nervous. The cervix uteri is lacerated and a large surface abraded; there is some immobility of the uterus and the body is pressed a little toward the right side. A tumor the size of a turkey egg is found on the left side and one the size of a partridge egg on the right side. Under treatment the menorrhagia was cured and the abraded surface healed, but the tumors grew a little larger. On January 15, 1892, I did a laparotomy and removed a pus tube from each side without rupture; no irrigation or drainage were used. Her pulse remained for a week below 70 per minute, and temperature was normal with no tympanites. She was given no opiate, suffered no pain after the second day and was able to leave St. Joseph's Infirmary in two weeks. She has since been well.

Case 7.—Mrs. T., from Hardin County, Kentucky; aged 32; married twelve years but never pregnant. The subjective and physical history of the case is nearly pathogenic of extra-uterine pregnancy in the broad ligament at about three and one-half months. An abdominal section was done November 19, 1889. The placenta and membranes were extensively adherent, but were easily separated without alarming hæmorrhage. The tumor was ligated at its base *in the broad ligament, the ligature including the proximal and distal parts of the ovarian artery.* The fœtus was developed to three and one-half months, and the membranes were unusually large. The uterus was five and one-half inches deep and adherent to the abdominal walls on the right side nearly up to the umbilicus, and three inches of small intestine were firmly bound to the walls between the uterus and the mesial line. The abdominal cavity was thoroughly irrigated and a glass drainage tube used for three days. She had no shock and was put to bed with a pulse of 80. At no time was there an untoward symptom consequent to the operation, but on the fourth day, and for a week afterward, she had an exhausting diarrhœa which was relieved when she passed several large round worms. She now began to complain of severe pressure upon the rectum and bladder and upon examination a large hæmatocele is found in the left broad ligament pressing into the pouch of Douglas. This finally suppurated and discharged into the rectum, and the patient made a slow but final recovery. It also ruptured into the tract of the drainage tube and discharged great quantities of fecal matter and gas through the lower part of the abdominal incision, but this ceased in a few weeks and in six months the fistulous opening had closed. She is now in as good health as at any time since marriage.

Case 8.—Mrs. B., Louisville; aged 28; has had one abortion; consulted me in January, 1891; gives no history of disease of the generative tract until two months ago; she then missed her period and has well defined symptoms of extra-uterine pregnancy on the right side which has probably ruptured into the broad ligament. The uterus is enlarged, pressed to the left side, and partially fixed. There is a tumor larger than a goose egg in the right broad ligament which rises out of the pelvis and can be felt by abdominal palpation. A laparotomy was done next day. The tumor was extensively adherent but was easily separated and removed; the left ovary and tube were also removed because they were so diseased as to be of no possible service and if left would probably have caused much suffering and required a subsequent operation. The abdomen was irrigated and a drainage tube used for several days. She had *before the operation a pulse of 125, and temperature of 101°*; the pulse ran from 125 to 140 for two days after the operation, but then fell to about 100. On the sixth day she had pelvic peritonitis which caused intense suffering and great prostration for ten days, when she began to improve and made a slow but apparently perfect recovery. She now says she is entirely well but I have not examined to see if there are pelvic adhesions or exudates. The nurse did not know my method of caring for the tube and probably caused the peritonitis by the introduction of septic matter. The specimen was an extra-uterine pregnancy of the tube which had ruptured into the broad ligament at about eight weeks. The embryo had been absorbed, but the placenta was relatively large and its character but little changed.

Case 9.—Mrs. H., Louisville; aged 23; married three years but has not been pregnant; was always a nervous woman, and often suffered pain in the right ovarian region, which gradually increased in severity after marriage and especially so at coitus and during menstruation. Has been confined to her bed for eight months. She has taken hypodermatically nearly one grain of morphia with atropia three times daily for several months, and is intensely hysterical with but little inhibitory power. Her digestion is bad, and she will eat but little unless under the influence of morphia; at other times she vomits the little she is induced to eat. She sleeps only a few hours a day; intellection is badly impaired and her pulse is irregular, ranging from 90 to 140. She has frequent seizures of hystero-neuroses the most remarkable I have seen. The capillaries of the face, and in isolated parts of the body, become so paralyzed that the surface is of nearly a scarlet flush, while the capillaries of the intervening spaces are so contracted that the surface is blanched. This condition gradually appears, lasts for a few hours, and gradually disappears, *to return* sometimes as often as twice daily. When the flush begins the pulse increases in rapidity and finally gets to 140, but when the flush disappears it is again 90. She is constipated. She formerly weighed 130 pounds, now weighs only 90. *The uterus is retroverted and held firmly down by tough adhesions.* The broad ligaments are thickened and inelastic, especially the right one, which is so sensitive that the finger pressed gently against it causes severe pain. No well defined solid tumor can be felt but there is an enlargement of some kind. A laparotomy was done February 25, 1892. The adhesions were old and so tough that it was hard to separate them. The pouch of Douglas was nearly obliterated, but *the uterus was separated and lifted from the sacral cavity.* The ovaries were held down by adhesions but not sufficiently diseased to justify their removal. She and her husband had asked that the ovaries be spared if possible. On the right side there was an imbedded parovarian cyst the size of a turkey egg which was enucleated and removed. Irrigation was used and a glass drainage tube kept in for two days. There was but little shock and no untoward symptom for two weeks. She took one-fourth grain morphia occasionally for a few days but the quantity was daily decreased until she was given in ten days only one-eighth grain daily. Her pulse after the operation ranged from 80 to 90 and there was no recurrence of the flush. Her mental trouble had nearly disappeared and she was walking about the room and halls of the Infirmary. On the fourteenth day she was made very nervous by an accident in her room, complained of the return of the pain on the right side and compelled the nurse and her husband to continue the morphia. The flush returned daily for two weeks, but the pulse did not go above 115. The conditions at the Infirmary were such that it was impossible to prevent giving the morphia, and as she would not improve unless this was done I sent her to her sister in Memphis, Tenn., and put her under the care of Dr. R. B. Maury, who gradually reduced the quantity, and after ten days gave her none. She returned to the Infirmary two weeks ago quite feeble, but has taken no morphia, has no flush or excitement of pulse, and her nutrition is good. She walks about the halls and in the yard. She complains of pain on the right side, but I believe this will finally disappear. The uterus is again retroverted and there may be some new adhesion, but there is no defined thickness or exudation of the broad ligaments. The ligaments were so thickened and inelastic that the uterus could not be brought high enough to admit of hysterorrhaphy, but this could probably be done now if another operation becomes necessary.

Case 10.—Mrs. W.; Eminence, Kentucky; aged 30; widow; has never been pregnant; has suffered for several years with some uterine or pelvic trouble and says she has had a pelvic pus cavity aspirated through the vagina twice with some temporary relief; has constant severe pelvic pressure *and pain, and is seldom free from intense* headache. Her menses are irregular and profuse. The uterus is pushed toward the left side and is nearly immovable, and on the right side there is a hard tumor the size of a large orange that seems to be blended with the uterus. A laparotomy was done in October, 1889; the tumor was held tightly in the pelvis by strong bands of adhesions and appeared to be connected with both uterus and bladder by continuity of tissue. When the adhesions were separated the upper part of the tumor rose two inches out of the pelvis and could be plainly seen and carefully examined. Its surface was of a dark venous color, and it was a typical case of deeply imbedded broad ligament cyst probably arising from the *hilum* of the ovary. The conditions were such that its entire removal would have been practically impossible, and as the contents of such tumors are often malignant [illegible] it would have been bad surgery to have [illegible] ial removal and incurred the risk of allowing some of the contents to come in contact with the peritoneum; besides these are the cases that die [illegible] shock on the table or soon afterward. [illegible] distressing pelvic pressure would be greatly lessened by the removal of the adhesions, I left the tumor and closed the abdomen expecting to watch the progress of the case, and to finally attempt its removal if it continued to grow and jeopardize the life of the woman. *Her recovery was rapid and she has been* much improved in health, and feels that she is well enough to again marry. The tumor is not so hard or fixed and is not as large as when the operation was done. The pain and inconvenience from pressure are greatly improved as is also the headache.

Case 11.—Mrs. W.; near Brandenburg, Kentucky; aged 40; married and has several children, the youngest three years old; she is anæmic and sallow; has complained of some pain and pressure in the region of the uterus for six months, but for three months the pain on right side has been so severe that she has been most of the time confined to her bed and has lost considerable flesh. She has not missed her menstrual period until three months ago; since then menstruation has been irregular. The uterus is fixed and there are hard exudates on each side; it is the size of a large orange and reaches on the left side above the pelvic brim. An exploratory laparotomy was done on March 27, 1892. A band of omentum nearly as wide and thick as the hand was attached to the right broad ligament in the region of the severe pain. It was ligated in two places and divided. The enlarged uterus and the exudates in the broad ligaments were united in one solid malignant mass. No part of the peritoneal surface of the intestine was adherent to the tumor, but the enlarged uterus, with its neoplastic surroundings, had insinuated itself under the sigmoid flexure of the colon, which was attached by its mesentery entirely across the anterior part of the uterus and apparently entered the pelvis on the right side. This peculiarity was positively distinct, and was carefully examined by several of the assistants. This was a condition that I had neither seen nor heard of, and I will not attempt an explanation to show how the uterus and tumor got under the bowel. She had no pain after the operation, took no morphia, had a normal pulse and temperature, and went home, a distance of fifty miles, in two weeks. She has had no pain since and has gained in flesh, but of course the growth will continue to increase and will eventually kill her.

Case 12—Mrs. P.; of Bowling Green, Kentucky; aged 65; widow and has four children; has noticed a tumor in the left inguinal region for nearly twenty years, but it never grew rapidly or caused much inconvenience until the last three years. The tumor is twice the size of a pregnancy at term and causes disturbance in respiration. The history of the case and the physical signs indicate a typical ovarian cystoma. A laparotomy was done the first of May, 1892, and a multilocular cyst with feeble adhesions removed without getting any of its contents in contact with the peritoneum. The removal of the tumor, thorough irrigation of the cavity, and closure of the abdominal incision, was done in fifteen minutes. She has had no pain, has taken but one grain of morphia, and has made a perfect recovery, with normal pulse and temperature. She returned home in sixteen days and is in better health than she has been for ten years.

Case 13.—Miss P.; Ashland, Kentucky; aged 24; has been stout until six months ago; she then had a feeling of weight and some pain on the left side of the abdomen and detected a small enlargement. She thinks the enlargement began just below the short ribs, but her physician afterward examined her and thought it began lower down. It gradually increased and she began to lose flesh rapidly but at no time had any fever nor was there any disturbance of the function of the kidney or any abdominal viscus. For three months the tumor could be traced from the short ribs to the pelvis, and the left buttock is enlarged to twice the size of the right. The uterus is retroverted and the tubes and ovaries are bound down by adhesions, but the tumor cannot be felt in the vagina. It is nearly immovable, and by palpation and percussion the outlines show that it extends from under the ribs to the pelvis and within one inch of the mesial line. It causes lateral bulging of the abdomen, is apparently cystic, but percussion in front of the anterior superior spinous process of the ilium does not exclude the possibility of an intervening bowel. A laparotomy was done at Ashland, May 8, 1892. As it was impossible to tell the nature and conditions of the tumor and its relation to the bowels or other abdominal structures without an exploratory incision the abdomen was opened in the mesial line. The adhesions of the tubes and ovaries were separated and the uterus lifted out of the sacral cavity. The tumor was extra-peritoneal, and the wall protecting it from the peritoneal cavity was thick and extensively adherent to the omentum. It extended from a little below the pectineal line in the pelvis to above the kidney, but that organ was not involved; posteriorly it extended to the spinal column and anteriorly to midway between the iliac bone and the mesial line. The abdominal wound was closed and a vertical incision two inches long was made an inch in front of the anterior superior iliac spinous process. A half gallon inodorous, thin, milky looking liquid was discharged, the nature of which it was not possible to tell without a microscopical examination which could not conveniently be had. The cavity extended further than the finger could reach below and above. There were some connecting bands which were broken, but the general conditions were not such as are usually found in a pus cavity. It was evidently some kind of extra-peritoneal cyst the cause and nature of which I do not know. The cavity was thoroughly irrigated with a bi-chloride of mercury solution, and some matter similar in appearance to brain substance washed out. Two gum drainage tubes were sutured in the angles of the wound, one dipping to the bottom of the sac and the other going up to the kidney. The cavity was irrigated twice daily with the bi-chloride solution, but only a little drainage except the liquid injected was noticed, and there was no pus. After a few days there was no discharge and the water injected came away clear. The cavity is contracting rapidly and will soon be obliterated and the wound closed. The operation was followed by no untoward symptom, her pulse and temperature remaining about normal. The bowels moved freely in forty-eight hours without medicine and each day since. She ate heartily after this and is gaining flesh and strength.

Case 14.—Mrs. S.; Louisville; aged 40; married and has one child, aged twenty-one; two years ago she was treated for typhoid fever, but entirely recovered and remained well until four months ago; since then she has suffered severe pain in the region of the right broad ligament which has continued to grow worse; she is very anæmic and so emaciated that she weighs not more than ninety pounds; her digestion and nutrition are bad, and her legs are constantly cold and covered with clammy perspiration; she has a temperature of 101° and a pulse of 110 to 120. The uterus is fixed by a tumor in the right broad ligament. There is no disease in the left broad ligament, ovary or tube. Her condition was so critical as not to admit of temporizing treatment, and though very feeble an immediate laparotomy was decided upon. She was operated on August 24, 1891. There was but little disease of the left ovary and tube and they were not removed, but on the right side of the uterus there was a tumor the size of a goose egg, in which the ovary and tube were so imbedded that they could not be distinguished by the sense of touch. A coil of the ilium was firmly adherent to the tumor and when separated the adherent surface was so unhealthy and weak in appearance that I sutured the bowel and united the peritoneum to peritoneum. In an attempt to enucleate the tumor the tissues were so rotten that the ovary and tube and a great quantity of matter similar in appearance to brain structure were easily removed without the necessity of using a ligature. There was no pus or liquid and the enlargement was probably caused by tubercular deposit. The cavity was irrigated and a glass drainage tube used for two days. The operation was completed in thirty minutes and she was put to bed with a pulse better than when she went on the operating table. She made relatively a good recovery and her temperature and pulse were not as high at any time after the operation as before it. A mural abscess formed on the fifth day in the line of the incision caused by carelessly leaving bruised and lacerated muscle in the wound. The legs were warm in twelve hours after the operation and there was no more clammy perspiration. She was able to sit up in two weeks and left the Infirmary a few days later. She has entirely recovered, suffers no pain and weighs 140 pounds.

Case 15.—Mrs. L., Louisville, aged 30; married and has three children, has been well until one year ago; since then she has suffered with severe pelvic pain and has been treated for pelvic peritonitis; she has gradually gotten worse and is now emaciated, feeble, digestion bad, bowels constipated, suffers almost constant severe pelvic pain, and is confined to bed. The uterus is fixed and hard exudates are felt in both broad ligaments and low down in the pouch of Douglas. A laparotomy was done at the Infirmary December 4, 1890, and both appendages separated from firm adhesions and removed. In the right ovary there was a cyst the size of a hen egg. The extensive hard exudation in the base of the broad ligament and in the pouch of Douglas could not be removed, and seemed to be incorporated into the tissues of the uterus and surrounding structures. I suspected the trouble was malignant. A glass drainage tube was used for two days. She made a good recovery from the immediate effects of the operation and returned home in about two weeks practically relieved of pain and in every way feeling much improved. The broad ligament and retro-uterine exudates increased and my diagnosis of malignant disease was confirmed. The disease is now extending rapidly and she will probably not live through the coming summer.

Case 16.—Miss N., Louisville; aged 24; has had for several years some pain in her pelvis, and disturbed uterine function; was treated one year ago for excessive flooding, lasting two months; since then she has constantly suffered so severely in the region of uterus and ovaries that life has become a burden, and she begs to be operated upon. The uterus is retroverted and adherent, and tough adhesions are felt in each broad ligament. A laparotomy was done April 8, 1891. When the adhesions were separated and the uterus and its adnexa exposed, the tubes and ovaries were found to be of no use, and were removed. There was considerable oozing and a glass drainage tube was used for two days. Her recovery was uninterrupted and she left the Infirmary in two weeks. She has had no pain in pelvis since and her health is perfect. She walks as much as two miles without inconvenience. Her menses have not returned.

Case 17.—Mrs. C. (colored); Louisville; aged 42; married and has had children but none living; has had irregular menstruation with menorrhagia and great pain in the uterine region for several years which caused her to be confined to bed six months ago, for three months; is now able to walk a few squares but is in nearly constant pain. The uterus is fixed and solid exudations can be felt in the right side. There is not much thickening in the left side. A laparotomy was done at the City Hospital September 1, 1889. In enucleating the right ovary and tube the fingers opened a small cavity connecting with the bowel by a sinus. A fecal odor was well marked but the opening in the bowel was too small to be detected and no fecal matter escaped. The left ovary and tube were not disturbed. The cavity was irrigated and a glass drainage tube introduced to the deepest part of the excavation caused by the separation of adhesions. She had no shock and did well for two days, but the liquid removed from the tube had an offensive odor. I put her under the care of the visiting surgeon and left the city for four days. On the third day, and afterward, the discharge from the tube was still offensive and had become purulent. Her temperature rose to 103°, but she had no symptom of more than local infection and inflammation. The tube was used for two weeks and large quantities of offensive pus removed. The temperature and pulse were now normal. Pus continued to discharge through the tube opening at the lower angle of the wound but it gradually grew less in quantity, the bad odor disappeared, and at no time was there any fecal matter. After a few weeks she was able to leave the Hospital and has continued to improve and is now free of pain, has no menorrhagia, and can walk four miles without causing pain or fatigue. The sinus discharged pus for over a year but finally closed without treatment. This is the only Hospital or colored patient included in this report.

Case 18.—Miss S., Cincinnati, Ohio, aged 26, has not been well for several years, but for a year has suffered nearly constant pain on the left side of the uterus which extends down the left leg and causes lameness. A variety of treatment has done no good. She is very lean, nervous and anæmic, and is able to do but little work. The uterus is retroverted and fixed, and the left ovary and tube adherent and diseased. A laparotomy was done August 5, 1891. The adhesions were separated and the uterus restored to its normal position. The left ovary was destroyed by a cyst and the cavity of the tube obliterated. Both were removed and the uterus was sewed to the peritoneum above the pubes by introducing a heavy silver wire through the thickness of the abdominal wall on each side of the incision including the broad and round ligaments. The right appendage was not removed. With the exception of some stitch abscesses she made an easy recovery. The silver wires were removed on the seventh day. She left the Infirmary in three weeks; she suffered for a few months some pain in the side and leg, but it gradually disappeared and she is now perfectly well. The uterus is still adherent to the anterior abdominal wall, but is otherwise movable, and there are no pelvic adhesions.

Case 19.—Mrs. C.; New Albany, Ind.; aged 28; married and has two children; is extremely nervous, which is increased at the menstrual period; has constant pain in the pelvis and back, and suffers from pressure upon the rectum and irritation of the bladder. The womb is retroverted and adherent but the ovaries and tubes are not much diseased. She and her husband insisted upon the removal of the adnexa, which I declined to do but consented to do a laparotomy, separate the adhesions and fasten the uterus in front. The operation was done June 9, 1891. The adhesions were separated and the womb, ovaries and tubes inspected. The tubes were perfectly healthy, but the ovaries were abnormally cystic and twice the usual size. The cysts were punctured and the ovaries reduced one-half in size. Silver wire sutures were introduced on each side of the uterus through and under the broad ligaments, including the round ligaments, and tied externally nearly one inch from the abdominal incision. Recovery was prompt, but the silver sutures were not removed for two weeks. The uterus was firmly united to the peritoneum and has remained so. Her condition was in every way much improved and the position of the uterus, as in the preceding case, has caused no inconvenience. She is now pregnant five months. I now treat these cases by sewing the round and broad ligaments to the uterus, or to the peritoneum of the anterior abdominal wall.

Case 20.—Miss S.; Louisville; aged 34, has for many years had painful menstruation and has suffered constantly and sometimes severely, with pains in the uterine region; has been very nervous, with various reflex troubles, and is now and has often been so intensely hysterical that it amounts to practically a species of insanity. Micturition is frequent and painful, and the bowels constipated; her digestion is bad; she is very anæmic and emaciated, and eats and sleeps but little. She has been treated several times for pelvic peritonitis; has been confined to bed for several months. Electricity has been used but she says it always increased her suffering and made her worse. The uterus is retroverted and firmly fixed in the pouch of Douglas, with adhesions on the sides. Her pulse is 120 and feeble, temperature 101°. A laparotomy was done in October, 1889. The adhesions were separated and the uterus restored to its normal place. The ovaries were not enough diseased to justify removal. Before I had time to suture the uterus to the abdominal wall the anæsthetizer and my assistant urged that I close the abdomen immediately because her pulse was very feeble and rapid. I did so, but very soon saw that the operation could easily have been completed. She continued so nervous, and her mind was so disturbed, that she could hardly be kept in bed, and we were compelled to give several hypodermic injections of ⅛ grain of morphia. Considering her feeble condition and conduct, she made a very good recovery; but for nearly a week, after the fifth day, she had a fever of 101° to 103° caused by several stitch abscesses. After two weeks, she improved nicely, ate and slept better and grew less nervous. Nearly all the symptoms of insanity disappeared. Within two months she was in better health than she had been for many years, and began to gain flesh rapidly. She was finally able to walk several squares, and is in comparatively good health. She has just recovered from typhoid fever, and has been in bed most of the time for six weeks with some of the symptoms of the old trouble. The uterus is again retroverted and is probably adherent. If she does not improve I will do another operation and sew the uterus to the abdominal wall with kangaroo tendon.

Case 21.—Mrs. V.; Louisville; aged 40; widow with one child; has been very nervous for several years and suffers with constant severe pain in the head and in the pelvis, which causes distressing reflex and hysterical disturbances. The symptoms are worse at the menstrual period. She is a constant invalid; spends much of her time in bed and seldom leaves the house. It is nearly impossible for her to walk a square because of the pain it causes in the region of the uterus, lower part of the abdomen and the back. She has been treated for several years by an excellent physician but has only been temporarily improved, and he does not believe she can be cured without a laparotomy. The uterus is not displaced, the ovaries are enlarged to twice the normal size, and tender, and there is a cystic tumor on the right side the size of a hen's egg. A laparotomy was done October 6, 1890, at St. Joseph's Infirmary. The fat over the abdomen was nearly four inches thick, but the operation was completed without difficulty, ovaries, tubes and a parovarian cyst being removed. The tubes were normal, but the ovaries were cystic, and the outer covering had become thickened and hard from chronic ovaritis. She made an uninterrupted recovery and returned home in a little over two weeks. Occasionally she would have pain in the pelvis and reflexes, but this gradually disappeared and she has now no trouble in that particular and is attending regularly to her art duties. There has been no return of menstruation. Had this woman been younger I should probably have punctured the cysts in the ovaries instead of removing them, for it is our duty never to sacrifice these organs, especially during the fruitful period of a woman, if she can be cured without it.

Case 22.—Mrs. C.; New Albany, Ind.; aged 35; married but has no children. Has had for several years intense pain in the inguinal regions, with a constant sense of pressure or weight in the pelvis, and well marked reflexes. These symptoms are much worse at the menstrual period. She has been treated by several physicians but has gradually grown worse and begs to have the ovaries removed. The uterus is too large, but otherwise normal; the tubes are not diseased, but the ovaries are twice the normal size and very tender. A laparotomy was done September 2, 1890, and the ovaries and tubes removed. The ovaries were in a state of well marked so-called cystic degeneration, and the outer tunic was thick and tough, caused by chronic ovaritis. She left the Infirmary in sixteen days having made an uninterrupted recovery. For six months after the operation she occasionally had some pain in the inguinal regions caused by hard work, but this finally passed away and for a year she has been perfectly free of all the symptoms for which the operation was done and is one of the most grateful patients upon whom I have operated. She has had no return of her menses.

Case 23.—Mrs. R.; Louisville; aged 44; married and has one child, aged 22; has been for many years a very nervous and sometimes peculiar woman. She fell and hurt herself in Chicago four years ago and dates her present trouble from that fall and has gotten gradually worse. Her bowels are constipated, appetite bad, and she sleeps not more than two or three hours daily. Menstruation is regular and her mental trouble is worse at that time. She wants me to remove the uterus, ovaries and tubes. The uterus is normal, but the ovaries are more than twice the average size. She is an insane woman. The ovaries and tubes were removed October 27, 1890. In size and pathological significance the ovaries were in a condition similar to case 22. She recovered nicely and left the Infirmary in fifteen days. She was much improved and her mind was not so easily disturbed, but she still complained of some pelvic reflexes, and insists that the uterus be removed. She gradually improved and in six months had practically regained her physical and mental health.

Case 24.—Mrs. T.; Central Kentucky; aged 22; married two years but has no children; was a robust girl weighing 140 pounds until one year before marriage and had never had any trouble with menstruation or pains at any time in the uterus or ovaries. Since then she has seldom been free of pain in pelvis and sometimes very severe, which is usually worse during menstruation. Since marriage the trouble has continuously grown worse and she now weighs about 100 pounds. She has no desire for coitus, and it is always painful. She has been treated by one of the best physicians of the State but has not improved. She is often confined to bed, is seldom able to attend to her domestic duties, and is fast becoming a chronic invalid. Her appetite, digestion and nutrition are bad. The uterus is not diseased, but the ovaries are enlarged, and very sensitive to pressure. Her husband and his father, two excellent physicians, and an excellent surgeon of Louisville, concurred in the opinion that the appendages should be removed. The operation was done November 16, 1889. The tubes were healthy but the ovaries were in a state of chronic inflammation. The ovarian or pelvic pain was not felt after the appendages were removed. She had no untoward symptom and begged to be allowed to sit up after the fourth day saying she had not felt so well for three years. She went shopping on the thirteenth day and returned home, a distance of sixty-five miles, in two weeks. She has been practically relieved of the old trouble, her nutrition is better, and she now enjoys coitus. Her menstruation has occurred a few times. I do not, however, consider that the operation has entirely cured her, and probably she could have been gotten about as well without the removal of ovaries and tubes, had she been willing to submit to treatment such as may be practiced in special hospitals or infirmaries, where isolation, massage, electricity, special diet, etc., may be rigidly enforced.

Case 25.—Mrs. T.; Chicago, Illinois; aged 28; married and has two children, the youngest one year old; has been a nervous and neurasthenic woman with but little inhibitory power; has always had dysmenorrhœa and has often been hysterical and had pain in the pelvis at other times. Since the birth of last child the symptoms have progressively increased in severity and she is never without pain and nervousness and sleeps but little; she is constipated and has indigestion. A variety of treatment has given but temporary relief; the uterus is one-third too large, but not otherwise diseased; there are no pelvic adhesions or exudates, but the left ovary is three times and the right one twice the normal size and very sensitive to pressure. The appendages were removed November 18, 1889. The tubes were not diseased, but the ovaries were the size described above, the outer layer thick and tough, and in a condition of cystic degeneration, She recovered nicely and left the Infirmary on the eighteenth day. She was very well for some months after the operation and is now much better than before it; but she still suffers pain in the pelvis and is nervous. While the operation was an immediate success, the subsequent results were not entirely satisfactory. The operation was probably the best thing that could have been done. and she may finally get well, but the result might have been just as good without removing the appendages. She has menstruated a few times and has gotten quite fleshy.

Case 26.—Mrs. H.; aged 25; a widow with no children; is very thin, her appetite poor, digestion bad, and nutrition not good; she is never without pain, and suffers intensely at menstrual period, which is very scant. She has been treated by one of our best physicians for a long while but has not improved. The uterus and tubes are normal, but the ovaries are about half the proper size and hard and sensitive. The appendages were removed October 3, 1890. The tubes were short and small but healthy, while the ovaries were contracted and cirrhotic. She left the Infirmary in two weeks, has had but little pain since, is not so nervous and her nutrition is improved. She is not cured, but has been very much benefited by the operation.

Case 27.—Miss H.; Moberly, Indiana; aged 30; has for many years been very nervous; has had constant pains in the pelvic structures; her menses have been regular, but scant, and she has had very severe dysmenorrhœa. She is very lean and anæmic, and her symptoms are getting gradually worse. The uterus is healthy, but the ovaries are very small and hard. The adnexa were removed May 22, 1891. The tubes were about two-thirds the usual size but not otherwise abnormal. The ovaries were about half the normal size and very hard. She had no untoward symptom except some troublesome stitch abscesses which were annoying and caused two degrees of fever. She returned home from the Infirmary in three weeks looking and feeling better than for two years. She still has some pain, but her nutrition and general health have improved. She weighed before the operation about ninety pounds; she will now weigh 125.

Case 28.—Miss D.; New Albany, Indiana; aged 32; has suffered with irregular and painful menstruation for ten years; has been very nervous and has had frequent attacks of epileptiform convulsions which her physician and family believe to be largely due to ovulation. She is very lean, and appetite, digestion and nutrition bad. Her skin is often, and hands and feet constantly, covered with cold, clammy perspiration. The uterus and ovaries are not displaced, or bound by adhesions, but are too small. There is but little tenderness in the uterus or the broad ligaments. I was urged by her doctor and father to remove the appendages as all other known means had failed to do any good and if this did not cure the convulsions it would probably so improve her nutrition and general health that other remedies might then act more efficiently. After explaining that the removal of the ovaries and tubes would probably not improve the patient's condition in any way I consented to do the operation. A laparotomy was done November 17, 1891. The tubes were healthy, but the ovaries were small and cirrhotic, and incapable of performing a healthy function. Her circulation and nutrition were improved in three days after the operation, and she left the Infirmary on the twentieth day. She is now much improved, but still has convulsions and I doubt if she will be entirely relieved.

Case 29.—Miss D., Louisville, aged 28, has been a great invalid and very nervous for ten years; has taken large doses of morphia hypodermatically, but has been cured of the habit and takes none now. She is fleshy, but the flesh is not solid. Her nutrition is not good, inhibitory powers very feeble. She suffers with some pain in the pelvis all the time, but it is much worse at her period. She has been treated by several learned physicians, but has been only temporarily improved. Her physician and family requested me to remove the appendages, believing that most of her trouble is due to, or kept up by, the intense dysmenorrhœa. The uterus is in a normal condition, but the ovaries are small and hard. The operation was done February 17, 1892. The ovaries were cirrhotic with comparatively few normal follicles. There were no adhesions and the tubes and uterus were healthy. She made an uninterrupted recovery but did not leave the Infirmary until the twenty-first day. She has improved regularly since the operation and is in better health than for several years, but is not well, and the operation may not cure her.

Case 30.—Miss L., Louisville, aged 26; a lady of excellent intellect, and good literary attainments; was in good health until five years ago; since then she has had dysmenorrhœa, severe and nearly constant pain in the regions of the ovaries, in the back and in the head, which has continued to get worse, and now she is much of her time, confined to bed; is nearly in a state of chronic invalidism. Her nutrition is becoming impaired, her inhibitory powers greatly weakened, and the reflexes apparently from the uterus or its adnexa are well marked, especially just before, during and just after her menses. She has been treated by excellent physicians here and in other parts of the country and has spent much time at the sea shore and various health resorts but has been only temporarily benefited. The uterus and tubes appear to be relatively healthy, but pressure upon the ovaries causes severe pain. From the subjective and physical symptoms chronic ovaritis is diagnosticated, which if not the original cause of her disease is now an important factor in preventing a cure. I was employed upon the advice of her physician to remove the appendages which had been advised by one or more well known surgeons in other cities, and she and her family wanted the operation done. Under these conditions I agreed to do the operation but could not give an encouraging opinion that it would cure all her symptoms. A laparotomy was done on October 10, 1891, the ovaries were indurated and a little contracted. They were carefully examined microscopically and found to be cirrhotic with the outer layer thickened and indurated from chronic ovaritis. She recovered from the operation nicely but did not get out of bed for over two weeks and did not leave the house for over four. She had some pain in the pelvis and headache, but all this nearly disappeared when she began going about. She is in better health than she has been for several years. She spent several months in the south and returned feeling very well with but few of her old symptoms. She has since been imprudent and her physician informs me has had a severe attack of supra-orbital neuralgia which continued for a week. Her nutrition and general condition are much improved, and she will probably regain her health, but this might have been accomplished without the removal of the appendages had she been confined for a long time in a well regulated sanitorium with a systematic course of treatment, such as diet, massage, electricity, etc., which could have been rigorously enforced; but, neither she nor her parents would have consented to this.

Case 31.—Miss K., Louisville; aged 24; has had since sixteen years old intense dysmenorrhœa with distressing reflexes at each period, which has made her nearly a constant invalid; she has been treated by physicians of large experience in such cases, and her cervix has been dilated. She has occasionally been a little improved but very soon relapsed. Has continued to get worse; the ovaries are very small and indurated. The appendages were removed April 18, 1892. She made an easy recovery and left the Infirmary in two weeks, in better health and more cheerful than she had been for several years. She called at my office four weeks after the operation feeling well and happy. I believe she will be permanently cured, for all her suffering seemed to have its origin in the disturbed menstruation.

THE RATIONAL TREATMENT OF TYPHOID FEVER.

A paper read before the Ohio State Medical Society, at Cincinnati, May 5, 1892.

BY F. W. LANGDON, M.D.

Mr. President and Fellow-members of the Ohio State Medical Society: The subject of fever—in its general aspect—has been deemed worthy of so much labor and study on the part of the physiologist, the pathologist and the clinician, and is of such practical import to all who practice our art in any of its branches, that no apology is necessary, I trust, for bringing one of its numerous phases before this society for consideration.

Looking at its most constant and evident symptom—the pyrexia—the physiologist points out, and the pathologist, and clinician confirm the probable existence of heat-producing, heat controlling and heat dissipating areas, situated in the central nervous system, and influencing by their abnormal action the production of this particular symptom.

That the pyrexia, however, does not constitute the disease is quite evident, since it may be absent, controlled or even eliminated, and yet the patient be far from well.

While, then, we are in ignorance, to a considerable degree, respecting the ultimate nature of the pathological phenomena of fever in general, we may accept as true, the dictum of Fordyce in his classic "Treatise on Fever" (p. 16), that it is "a disease of the whole system in every kind of sense," in other words a general disturbance of the entire organism, having for its prominent and most constant symptom elevation of the body temperature. It is unnecessary for the purpose of the present remarks, to discuss in detail questions relating to etiology, pathology, clinical history, or diagnosis of typhoid fever: suffice it to say, by way of introduction to the subject of treatment—that I accept the hypothesis of its bacterial origin, as being more in accord with observed facts than any other; the media of conveyance of the bacteria to the human subject being contaminated water or milk—perhaps occasionally raw vegetables, fruits and dust.

I do not believe it ever results from foul gases of any kind in which the typhoid bacilli are absent. I would as soon expect an apple tree to develop from April showers and sunshine!

The facts that the source of infection is not always traceable, or that cases occur sporadically, in isolated localities and individuals, does not, to my mind, militate against the bacterial hypothesis. When the mycologic botanist shall have mapped out the normal geographical distribution of the various bacterial organisms, with as much certainty as his brother now outlines the limits of the oaks, the pines and the grasses—then we may be enabled to account more definitely for the occurrence of these apparently inexplicable cases.

As regards the pathology, it seems to me probable that the bacilli enter the body through the alimentary canal; that they here proliferate and give rise to the production of one or more ptomaines; which, absorbed and distributed through the blood and lymph streams, cause the wide-spread impairment of function and structure which characterizes the disease.

Further, that in certain of the more active lymphatic structures of the small intestine (Peyer's patches and solitary glands) the bacilli themselves gain access or are absorbed; that their proliferation here gives rise to thrombosis with resulting necrosis, thus producing the well-known phenomena of tumefaction and ulceration of these organs.

Respecting the pyrexia, I regard it as probably the re-action to irritation (by the ptomaines) of nerve centres concerned in thermo-genesis, thermotaxis or thermo-lysis. Other nervous symptoms, e.g., muscular and mental delirium, coma, arythmic circulation, neuralgias, pareses and paralyses, are very likely produced by the same toxic agency, acting at times centrally, again peripherally and often reinforced or intensified by retention of excretory products of tissue metamorphosis.

Respecting diagnosis it is sufficient to say, that typical cases are unmistakable to the experienced observer, while atypical ones are often extremely puzzling, and the patient must be given the benefit of the doubt, a diagnosis being arrived at by exclusion.

Of the *indications* for treatment it may be said that they are not less than five in number, viz.:

1. To sustain the patient.

2. To remove or abate the cause of the disease so far as practicable.
3. To avert, control or alleviate dangerous or distressing symptoms and complications (e.g., headaches, insomnia, neuralgias, high temperature, intestinal hæmorrhages and perforation, bronchitis, pneumonitis, cardiac degeneration, thrombosis. abscesses, etc.).
4. To promote removal of products of tissue oxidation by excretory channels, viz., skin, kidneys, lungs, bowels.
5. Prophylaxis.

The *measures* by which these indications are fulfilled to a greater or less degree may be considered under two heads, namely:

1. Hygienic and prophylactic.
2. Therapeutic.

With respect to the former there is a general consensus of opinion which does not pertain to the latter. Given a well-ventilated, sun-purified room, two beds, elastic and neither hard nor soft, a nurse who is discreet, observing, and above all, obedient; add a well-selected liquid diet containing a minimum of nitrogenous principles and the typical conditions of hygiene are fulfilled. Without these therapeusis is likely to be "a delusion and a snare" whatever may be the particular plan of treatment adopted.

Respecting *plans* of therapeutic treatment, the most prominent requiring notice are:

1. The *expectant* or symptomatic plan; which has been uncharitably called the nihilistic plan, in that it abolishes all attempt to treat the disease and confines the treatment to individual symptoms.
2. The *antipyretic* plan which by hydro-therapeutic or medicinal measures addresses itself entirely to keeping the pyrexia within certain limits.
3. Antimycotic or anti-zymotic plan, e.g., calomel treatment, called "specific" by Liebermeister and others; the carbolic acid and iodine treatment of Bartholow, Wilson and others also belongs in this category.

The *expectant* plan of treatment makes no attempt to eliminate or abate the activity of the cause; hence I reject it as unscientific in theory and unsatisfactory in practice as compared with other methods.

In the light of our present knowledge of bacteriological chemistry, I would about as soon think of treating a case of syphilis or of diphtheria, or an abscess on the expectant plan as a case of typhoid fever. Even in mild cases, running an apparently favorable course, I think it probable that a judicious therapy directed to the cause may often lessen complications and the tendency to relapse. The *expectant* plan is comparable perhaps to an attempt to sail a rudderless ship through a narrow and dangerous channel, "expecting" to strike some rocks, but hoping with the aid of the pumps and favorable winds to guide the vessel safely into port. Far better, to my mind, is the adoption of some kind of temporary steering apparatus, even if imperfect, whereby as many rocks as possible may be avoided.

The *antipyretic* plan of treatment has been strongly advocated and statistically supported, especially the "cold bath" (64° to 68° F.) method of Brand. Objections to it are its impracticability outside of hospitals—and the fact that it is not devoid of danger from shock or fright in some cases. It undoubtedly has merit aside from mere antipyresis, as, for instance, in favoring elimination of toxic matters, products of retrograde metamorphoses, etc., through the cutaneous emunctories. As warmer water (80° 85° F.) would be at least equally efficacious in these respects and less objectionable in others, a comparison of the two on a large scale would be very desirable.

We may concede to hydro-therapy therefore, a useful position in the symptomatic treatment of the disease. As regards antipyretic treatment by drugs, it is undoubtedly useful within certain limits, in cases where the pyrexia is a special element of danger, but is at least uncalled for in the average typical case.

It must be conceded also that there is no absolutely safe antipyretic applicable to all cases; nor need we look for one, since the value of remedies bears a direct relation to their power over the organism, and power usually means power for evil as well as for good, according to its manner and place of use. In other words, most remedies which diminish temperature are in one sense, protoplasmic poisons, the difference between them being mainly in the intensity of effect on different tissues.

Antipyretic treatment therefore, is to be regarded as a choice between two evils, it may serve a useful purpose by putting on the brakes to slow excessive speed, but care must be taken that it does not stop the train or throw it off the track.

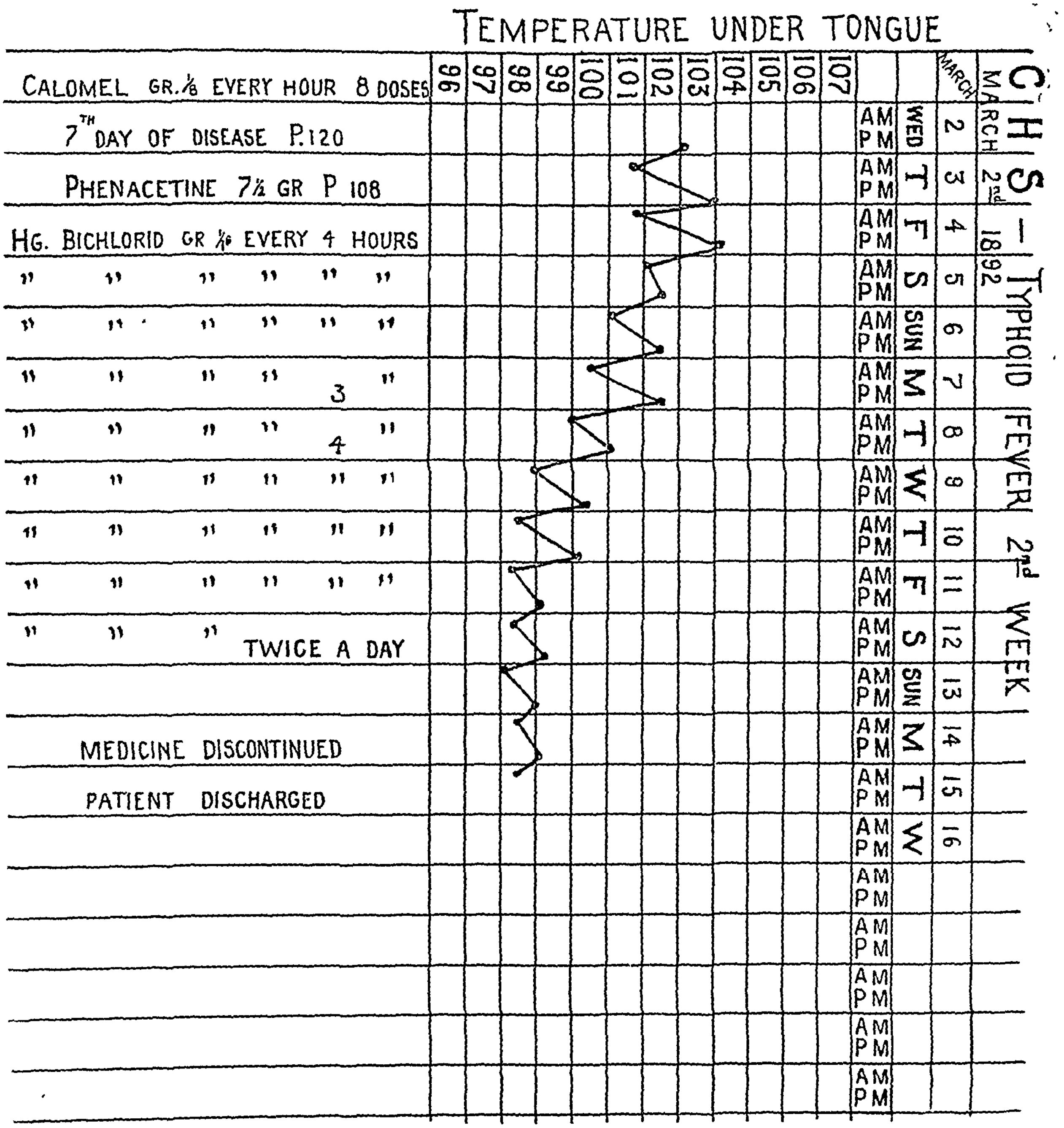
It may not be out of place here to call attention to the fact, that in one class of cases characterized by excessive pyrexia and extreme feeblenesss of pulse, with ataxia and great rapidity (150-160 and upwards), extreme caution should be exercised in the use of antipyretics as such. In these cases it has seemed to me at times, that the thermo-toxic or heat co-ordinating centres had "lost their grip" over the heat producing centres, the natural brakes are taken off and the machinery of heat-production is running wild, like an engine without a governor. Here the indications are plainly to avoid all depressants and support the controlling nerve centres by digitalis, strychnia, trinitrin and alcohol, pushed boldly to their physiological limits. To sum up the position of the antipyretic treatment, either by hydro-therapy or by drugs, it may well fulfill certain symptomatic indications but is to be criticised in that it does not meet the rational indication for removal or abatement of the cause.

Thirdly, the anti-mycotic plan of treatment claims our attention. Here may be placed the calomel treatment (after the "specific" plan of Liebermeister and others), where eight grains are administered three or four times a day for two days, *before* the ninth day of disease.

The carbolic acid and iodine treatment of Bartholow and Wilson are also steps in the direction of anti-mycotic therapeusis; and the same may be said of the use of turpentine, naphthaline and other agents.

Of the calomel treatment in the dosage mentioned it may be said that it is unnecessarily heroic; but it is a well-known fact that many practitioners of large experience and excellent judgment place great confidence in the continuous administration of calomel in small doses (gr. $\frac{1}{8}$ to $\frac{1}{4}$) three or four times daily throughout the disease. Such favorable opinion, based on wide experience and arrived at simultaneously by so large a number of competent observers, should not be disregarded; and viewed in the light of modern bacteriological science is to be looked upon as a therapy addressed to the cause; and this is true whether we regard the calomel as a chologogue or as a factor in the production of bichloride of mercury—in either event, intestinal antisepsis is favored.

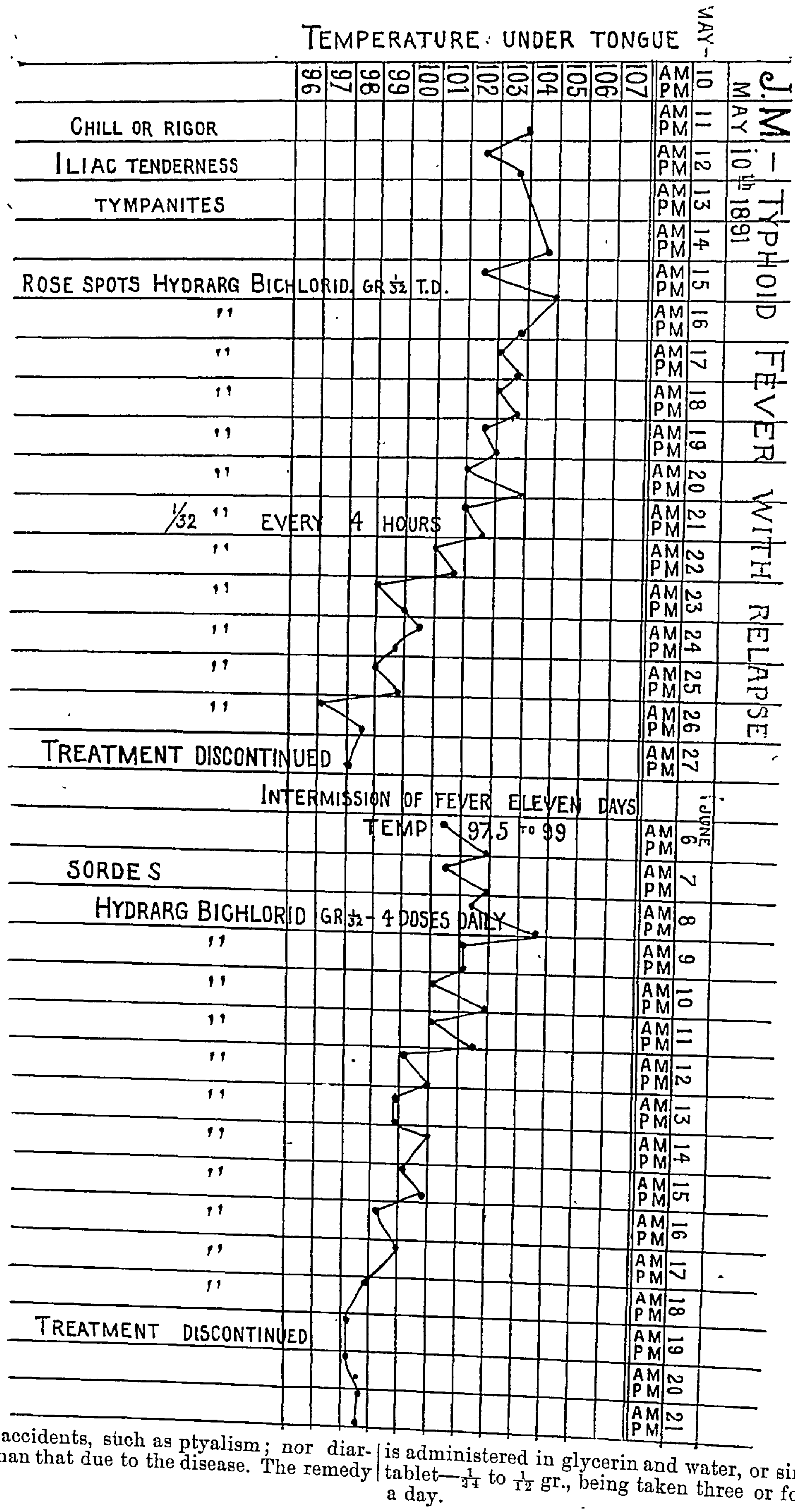
As the chemical reaction necessary to produce the bichloride salt is at least uncertain during the febrile state and the chologogue action perhaps equally so, I have been led to think favorably of the administration of the bichloride itself direct, with a view to intestinal antizymosis; and the results attained have appeared to me so satisfactory that I have been requested to place the treatment on record before this society with a view to its more extensive introduction into practice.



While occasional references to this method of treatment have appeared in the journals, I cannot at present recall dates and authors.

My first extended experience with it was during the typhoid epidemic of 1887-8 in Cincinnati, when I administered it to about thirty-five consecutive cases. Of these, the only fatal case was in a young man who walked into my office, having had a free intestinal hæmorrhage, and following it, had ridden twelve miles in a buggy. He died in four days with repeated small hæmorrhages and profound nerve-toxic symptoms. Owing to the more urgent need of attention to the hæmorrhage and other symptoms, he did not receive the bichloride treatment; hence the record of the bichloride treatment during that epidemic stands thirty-four cases without a death. Since then my record is sixteen cases with no deaths, making a total of fifty consecuative cases without result.

My experience with this plan of treatment has been eminently satisfactory, though I have seen relapses occur two or three times. I have been led to think that relapse was favored by too early discontinuance of the treatment, and have therefore, adopted the plan of continuing the bichloride for a period of ten or twelve days following the subsidence of pyrexia, with a view to the prevention of auto-infection. I



have had no accidents, such as ptyalism; nor diarrhœa other than that due to the disease. The remedy is administered in glycerin and water, or simply in a tablet—$\frac{1}{24}$ to $\frac{1}{12}$ gr., being taken three or four times a day.

In this connection I would repeat what I have already said[1] of the bichloride salt, viz.: that it is "in one sense the most certain antipyretic known to me." By this I do not mean that it is a suitable remedy to quickly reduce a dangerous temperature, but that in that indefinite class of fevers variously diagnosed as remittent, or as typho-malarial and conforming to no typical form, I have repeatedly seen the temperature steadily diminish from day to day, without re-access of the fever and with corresponding improvement in the collateral symptoms, under the use of the bichloride salt in $\frac{1}{24}$ to $\frac{1}{12}$ gr. doses three to six times a day. "I believe that it exerts the same controlling influence in many cases of typhoid and may even shorten the natural course of the disease without risk to the patient."

The temperature charts herewith appended will illustrate this action.

How this action is brought about, unless by the limitation of ptomaine formation in the intestine, I am unable to surmise.

To summarize what I would take the liberty of calling the "rational" treatment of typhoid fever: it should combine the good features of the anti-mycotic, the antipyretic and the expectant or symptomatic plans.

1. It should *sustain the patient*, by ventilation, quiet, and careful nursing; a diet of liquids only, and containing a minimum of nitrogenous principles, e.g., milk, boiled to prevent possible danger of adding infection to infection: and slightly thickened with well-baked wheat flour, to prevent formation of large curds in alimentary canal, as well as to add to its dietetic value. Broths (not beef tea), malt preparations, alcohol, pure water in abundance, fruit juices, clam juice, koumiss and buttermilk when they agree.
2. Attempt to remove or abate the cause so far as practicable by the administration of remedies which tend to favor intestinal anti-zymosis, preferably the bichloride mercury in $\frac{1}{16}$ gr. doses three or four times a day.
3. Symptomatic treatment as indicated in the individual case.
4. Promote removal of products of tissue oxidation, "the ashes of the fire," by attention to skin, kidneys, bowels and lungs.
5. Secure prophylaxis by boiling all soiled linen and bedding, and disinfecting stools and urine with corrosive sublimate, or sulphate of iron solutions.

In my opinion the plan of treatment which best meets all the indications mentioned, recognizes the modern advances in the pathological, bacteriological and chemical sciences and conforms to the requirements of a rational therapy.

65 West Seventh St., Cincinnati.

NECROLOGY.

Prof. T. G. Richardson, M.D.

Medical Department, Tulane University of Louisiana.
New Orleans, Louisiana, May 30, 1892.

The following resolutions were this day unanimously adopted by the faculty:

Whereas, Prof. T. G. Richardson, M.D., was called to New Orleans as a citizen by the medical department of the Tulane University of Louisiana, and continued his connection therewith from April 19, 1858, until severed by death, May 26, 1892, and having given to the medical department thirty-one years of active service, fourteen years as professor of anatomy, seventeen years as professor of surgery, and twenty of these years as dean; and having also given during the last three of retirement from active service the most convincing proofs of his great devotion to the present and future welfare of the medical department.

Resolved, That Prof. Richardson, endowed by nature with physical, mental and moral superiority, was pre-eminently distinguished for his culture and skill as surgeon and physician, which gained for him national reputation and rendered him one of the most instructive and popular of medical teachers; for exceptional scientific attainments, which while broadening his views of nature's God, left him none the less firm in his Christian faith; for his courage and patriotism in war and his benevolence and philanthropy in peace; for his moderation and wisdom in council, and for his zeal and ability in executive administration; for his inflexible devotion to truth, honor and duty; for the strength of his friendships in adversity as in prosperity, and for the fidelity, tenderness and devotion given to his beloved and honored wife.

Resolved, That by the death of this strong, wise and good man the medical department has lost its most valued friend and counsellor; the medical profession its most honored representative in New Orleans: the State of Louisiana a citizen unsurpassed for patriotism and for worth; his friends a heart to love and a hand to help them, and his wife and family one who has left precious memories of a loving, virtuous and noble life.

Resolved, That at the next annual commencement, April 5, 1893, memorial addresses upon the life and services of Prof. T. G. Richardson, M.D., shall be delivered.

Stanford E. Chaille, M.D., Dean.

Without exception, the first symptom of pregnancy is an increased frequency of the desire to micturate.

For a case of exophthalmic goitre in a man, Prof. Da Costa prescribed tinctura aconiti, gtt. j, every three or four hours, the dose to be increased to gtt. v. His diet should be bland and unstimulating, and he should rest in the recumbent position as much as possible. Prof. Da Costa said that it is very rare to have exophthalmic goitre in a man; while he had seen hundreds of cases in women, he could count on his fingers all the cases he had seen in men.

It would be a very curious page of history if we could learn how many wars, how much bloodshed and how much cruelty have had their origin in imperfect action of the bowels. (*Med. Record.*) Washington Irving, in his "Lives of the Caliphs," tells of a certain Emir named Al Hejaki, who suffered for many years from dyspepsia and abdominal pains, and this wretched man distinguished himself, perhaps above all other rulers who ever lived, by the enormous number of people whom he sentenced to imprisonment and death. He is said to have caused the death of no less than 120,000 persons, besides those who fell in battle, and to have left 50,000 in prison when he died. How much of all this misery might have been averted by the judicious use of mild aperients it is impossible for any one now to tell.

For Chronic Rheumatism.—
℞.—Sodii iodidi, ʒij.
Sodii bicarbonatis, ʒiv.
Potassii bicarbonatis, ℥j.
Liquor. potassii arsenitis, f ʒjss.
Decoct. sarsaparillæ comp., ad f ℥xx.—ɱ.

S.—A tablespoonful in considerable water three times a day after meals.—*Medical News.*

Corns are often cured by means of the following application:
℞. *Acidi salicylici,* ʒ ss.
Ext. cannabis indicæ, gr. x.
Collodii flexilis, ℥ j. ɱ.

Sig. To be applied to the callous part by means of a brush two or three times a day.—*Med. Record.*

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[1] Cincinnati Lancet-Clinic, Nov. 21, 1891, p. 673.

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SATURDAY, JUNE 11, 1892.

DIAGNOSIS OF RÖTHELU.

There has always been considerable confusion about the disease known as German measles, or röthelu, or rubella. Its very existence has been denied by some, while its diagnosis is often in doubt. The typical röthelu is practically very mild measles, so far as its clinical manifestations go. The disease commences suddenly and the eruption is apparent in from 12 to 24 hours after the onset of the fever. The eruption itself consists of pale rosy red spots, not unlike those of measles in their general appearance, but never of so deep a color. The impression produced by the eruption is often that of a fading measles. In distribution the spots may appear first upon the face, or first upon the chest, from which localities they spread rapidly to the other portions of the body. Particularly upon the chest are they liable to become confluent, while upon the extremities they are probably always discrete.

The constitutional symptoms are a curious mixture of those found in scarlatina and measles. The eyes are usually involved, but often so slightly so as not to attract attention. Photophobia may be present, without any conjunctival congestion. The bronchial symptoms, so common in measles, may be entirely absent, or present to a greater or less degree, but usually they can be found if looked for. The throat resembles scarlatina. Authorities agree in stating that the throat is involved, the tonsils becoming enlarged, and the mucous membrane of the fauces, soft palate and pharynx being thickened and reddened. Exudation upon the tonsils has even been noticed. It is not surprising therefore to find the glands of the neck enlarged.

Röthelu resembles scarlet fever in the suddenness of its onset, in the time of appearance of the rash, in the color of the rash, and in the involvement of the throat and cervical gland. It resembles measles in the form of the eruption, and in the occurrence of catarrhal symptoms.

It is readily seen therefore that atypical cases may so closely resemble one or the other of these affections as to make the differential diagnosis almost impossible.

In making a diagnosis of this disease in atypical cases, the type of the prevailing epidemic must be considered, and given much weight.

Where the diagnosis lies between scarlatina and röthelu, the slightest evidences of the measle symptoms of röthelu must be sought for. Here even trifling evidences of photophobia, conjunctival congestion, or bronchial cough, will be of service. The extremities must be watched and the appearance of discrete rose red spots in these localities instead of the scarlatinous eruption, especially if the spots appear upon the palms of the hand and the soles of the feet, must be taken as tending toward the diagnosis of röthelu. When the diagnosis lies between röthelu and measles, the scarlatinal symptoms of röthelu are the ones to be sought. In such cases involvement of the throat, and enlargement of the cervical glands are the features which would decide the diagnosis in favor of röthelu.

But after all, it certainly seems as though these differential symptoms are very unimportant, and the great factor of diagnosis is made to depend upon incidents so trifling as to be almost accidental. Unfortunately this general statement is true in many other infectious diseases, and naturally gives rise to the thought that the separating of doubtful cases into definite channels with definite fixed names, may be something of a forcing process, and that possibly the differences between the diseases themselves, may not be so real as the difference in their names indicates.

TRAINING SCHOOLS FOR MALE NURSES.

DR ABRAHAM JACOBI, of New York, approves of the establishment of training schools for male nurses, as well as for the gentler sex. All over the land have been established female departments—in some cities there are too many of them—but there are not enough yet for the men who would take advantage of that kind of instruction.

DR. JACOBI recently addressed the graduating class of male nurses at the Mills Training School, connected with Bellevue Hospital, and he is reported to have said that while the establishment of schools for female nurses had done a good work in the way of raising the standard of hospital and sick-room attendance, the need of carefully trained male nurses was still painfully apparent. The work that has been generously and gratuitously performed by medical men in helping to build up the various schools has, in effect, opened up a new profession—a profession both beneficent and honorable—to men as well as women. The superiority of nurse-attendance at our hospitals over that which marked the same institutions only a few years ago is one of the most striking proofs that the self-sacrificing labors of the profession have been successful.

The Mills School was begun in 1888, through the liberality of Mr. D. O. Mills. It has gone ahead more rapidly than was anticipated. It is said to have outgrown the accommodations, thought to be ample for ten years to come. The last graduating class numbered nineteen, five of whom were reported to have attained over 90 in the possible 100 in their examination marks. The greater number of these successful candidates were catalogued as coming from New York State and Massachusetts, but some "hailed from" England, Ireland, Wales, Canada and other points. It has been found that whenever an intelligent young man commits himself to the vocation of nursing he becomes thorough and enthusiastic.

Sir William Gull's Seal: A Confession of Faith.—A paragraph in the obituary note, concerning the late Dr. Gull, to be found in the last Guy's Hospital Reports, is interesting as showing an ultimate proposition of a mind given equally to medicine and philosophy.

Sir William laid no little stress upon literary forms of expression. To some he seemed fanciful in his ways of putting things. "A motto which he invented for himself pleased him so much that during the leisure of his last illness he not only had a seal engraved with the words, but he had them printed on a slip of paper as a kind of memento. It was: *Conceptio Dei, Negatio mei, Ratio rei.* That is: All knowledge begins with materialism—with skepticism—with getting at actual bare objective facts, the thing itself—the investigation of phenomena, the linking together of necessary cause and effect; that is, the intellectual part of knowledge; and unless that is the foundation, our morals and religion have no true and firm basis. Next comes ethical knowledge, which consists essentially in self-denial, self-restraint, recognition of the overweening importance which we all give to the individual, and especially to one individual in comparison with the whole. Lastly, as the crown of mental development, the fruit of knowledge, and the result of self-discipline, spiritual truth is discerned."

Or, if we try to put this briefly into English, in vocative phrase, we may have this lesson inculcated, namely: Magnify Fact, Minify Self, Insight of the Divine. This condensation partially, only, reflects the seed-thoughts contained in Dr. Gull's legend, but even this will afford food for reflection.

Precautions Against Cholera at European Ports.—Great precautions are now being taken by the British officials, at all the various exposed points liable to be visited by cholera in 1892. By their request, and those of other European governments, the authorities of Egypt are said to be exercising an unusual vigilance to prevent an incursion of the disease. Their principal activity has been and will be exerted among the Red Sea ports. The route of most immediate danger to the European nations is believed to be by way of Arabia and the Suez canal. Reports from Aden leave no doubt that cholera has been prevalent at points contiguous to that line of travel. The disease is now epidemic in the interior of Arabia, and accounts are not wanting as to the ravages of the pestilence in that region. Hundreds have died daily from that cause; and the fugitives from the stricken districts, arriving at the seaports, state that at the town of Harrar alone, as many as 1,500 persons had died within a fortnight. Another route along which the disease may be expected to travel is that traversing India, Afghanistan and Asiatic Russia. It is reported that cholera is lurking in the latter region. This is a condition that is not publicly known, but has been confirmed by the announcement, made in official circles, that a special commission has been appointed from St. Petersburg to investigate the cholera question in the southeasterly provinces of the Empire. Along this line of traffic, Turkey and southern Russia are the countries primarily endangered by epidemic cholera.

Army Surgeon Promoted.—Surgeon Fred. C. Ainsworth has been nominated to the Senate for promotion, to be *Colonel and Chief of the Record and Pension Office at the War Department.*

Dr. W. H. Broadbent.—This eminent London physician and teacher, whose writings are so well known to the American profession, has been appointed Physician in Ordinary to the Prince of Wales, a position made vacant by the death of Sir William Gull.

Old Glasgow and Greater Glasgow, under the City of Glasgow Act of 1891.—(With map.) By James B. Russell, M.D., LL.D., Medical Officer of Health, Sanitary Department, 1892.

The author of this report is sufficiently known to American sanitarians and physicians to make every printed statement of his entirely welcome on this side of the ocean. He is not only a master of his branch of medicine, but he is one of the most entertaining of writers on that branch—preventive medicine.

The author presents a statement of the civic changes that ensued upon the passage of an act for the enlargement of his city. On November 1, 1891, the area of Glasgow was almost doubled, and her population increased nearly one-sixth. A census was taken in 1891, which shows that the population at the present time is not far from 650,000. This is a larger population than is possessed by any of the cities of the United Kingdom, with the single exception of London. Old Glasgow claimed precedence over Liverpool by about 50,000. The extension act has probably secured the rank of Greater Glasgow, in the second place, beyond all likelihood of ever being challenged.

The statistical tables, twenty or more in number, drawn up under the direction of Dr. Russell and printed as an appendix, contain an amount of detailed information that will make this report of perennial value to the students of questions of population, overcrowding and tenant-reform.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting held in Boston, May 31, June 1 and 2, 1892.

TUESDAY, FIRST DAY—MORNING SESSION.

(Continued from page 724.)

Malignant disease located in the rectum too low to be removed through an anterior abdominal incision and too high to be extirpated through a perineal one, may be reached from behind, after resection of the coccyx, with or without, as necessity may require, that of the lower portion of the sacrum. This new operation, neither specially difficult nor dangerous, may be done in place of a colotomy, lumbar or inguinal, the latter being to-day more generally preferred. The same objection to such radical treatment as compared with palliative, viz., increase of risk without compensating probability of cure, holds good here as at the pylorus, although in less degree.

In no other part of intestinal surgery has more been done in thought, in experiment and practice than in that dealing with excisions of the bowel in continuity, rendered necessary on account of wounds, growths or gangrene. As the technique of the operations has been improved, the time of performance has been lessened, the risk to life diminished and the range of applicability increased. It is still undetermined whether end to end or lateral anastomosis is to be preferred, of how much value bone plates or rings or other like aids really are, to the patient at least; how far omental grafts may be required or how much additional security they afford.

The solid organs have again and again been brought under surgical treatment on account of wounds, of growths, and of tubercular, parasitic and suppurative diseases.

The kidney, spleen, and even the pancreas has been removed entire, the liver in part. The gall-bladder has been opened and its contents removed (stones, bile and pus), and later sutured and left in place or stitched to the abdominal wall, or cut away altogether. Pancreatic cysts have been at times extirpated, at times drained. These operations have yearly been more frequently performed for more varied causes, by steadily improved methods, and with a marked diminution in the resulting fatality.

Special notice cannot be taken of the new and improved operations upon the uterus and its appendages which have had for their object the relief of the distressing and grave conditions, and as their result, preservation of life and restoration to health in large and steadily increasing proportion of the cases treated.

Of the work done upon the bladder much might well be said; but only a passing reference to the high esteem in which, so justly, the supra-pubic section is now held; to the greatly improved and more successful treatment of tumors, and to the established position that in the period under consideration, litholapaxy has taken as the most generally applicable method of dealing with stone, even in young children, for the relief of whom ten years ago, lithotomy was everywhere regarded as the only operation to be ordinarily thought of.

Though there have been many operations of very considerable extent upon the thoracic wall to secure closure of an empyemic cavity and for the extirpations of tumors, in intra-thoracic surgery but little has been done, and that almost entirely in the evacuation of lung abscesses and the removal of hydatid cysts; the result in the latter class of cases has been remarkably successful. Pneumonotomy for tubercular abscess, according to the report made to the French Congress of Tuberculosis last year, had relieved in about fifty per cent. of the cases and cured in about one-fourth as many, but the number of patients thus far treated has been so small that the figures are of little importance in the consideration of the advisability or otherwise of active interference. It certainly stands to reason that the opening up and draining of the pulmonary tubercular abscess will not be likely to afford other than temporary relief, such pus collection being commonly not solitary, but one of a number in an extensively diseased organ. In the removal of deeply located foreign bodies and tumors, other than those connected with the wall, almost nothing has been attempted, and there are difficulties, anatomical and physiological, in the way of such operations which if in any given case are not insuperable, will probably always tend to make prudent surgeons cautious about entering upon one of them.

Pneumonotomy, experimentally shown to be readily done and attended with no great amount of danger, will doubtless in the future have a place in the treatment of lung injuries, in which already it has been a few times employed according to one report, in fifteen cases with a death rate of less than fifteen per cent. That it will ever be an accepted method of treatment for tuberculous lung may well be questioned.

It is in the surgery of the head and spine that the greatest advances have been made, the largest number of new procedures introduced, the most brilliant operations done; and in these regions more than anywhere else the surgery of to-day is a new surgery, much of it the growth of even fewer years than those included in the lifetime of the Association. More and more constantly are all depressed fractures of the skull being treated actively, and basal fractures, antiseptically. Stronger and stronger is becoming the conviction of surgeons that fractures of the spine associated with evidence of pressure upon or injury of the cord, should not be left to nature, if the general and local symptoms indicate lesions that can be removed or relieved by elevation or extraction of vertebral fragments, or the lessening of tension through opening of the sheath.

It has been proven to be wise to treat bullet wounds of the brain like other punctured wounds of the organ, by exploring, cleansing and draining the track; and occasionally it has been found possible to extract the ball through the wound of entrance or a counter-opening in the skull. The future must determine how far it is wise to go in the way of effecting removal of the bullet, and this must largely depend upon previously ascertained extent of liability to the supervention of epilepsy and mental disturbances weeks, months or years after the lodgment of a ball that at the time of injury did but comparatively little damage, or damage, at least, that was spontaneously recovered from.

Trephining for epilepsy following injury of the skull is no new operation; but of late such treatment has been quite largely employed, not only in cases where there has been an old fracture or contusion, but in those in which, by application of the now well established rules of cerebral localization, it has been possible to determine the place of a meningeal thickening or of a limited chronic encephalitis, or a new growth, solid or cystic, acting as an exciting cause of motor disturbance. Electrical stimulation of the exposed cortex has been made to indicate with exactness a diseased area, the removal of which has been followed by relief temporary or permanent, of the spasm symptoms. The attained perfection of operative procedures has reduced the mortality rate to a very low figure, and even the after presence of a gap in the skull has been prevented by a reimplantation of the removed bone. Unfortunately, in very many cases of recovery from operation, in a few weeks or months, or it may be years, the convulsive seizures will come on again. An established "epileptic habit" is independent of the original lesion, and after a certain time, which is a very uncertain one, the patient can no longer be assured that the cause removed, the effect will cease. But for all this, the morbid condition is so disabling, the relief afforded may be so great, the risk run is comparatively so small, that after proper and properly continued yet unavailing medicinal treatment, an epileptic in whom the seat of the disease can be fairly well located should become the subject of operative interference.

Trephining has also been done because of the existence of long standing severe headache; and in cases in which the thorough application of the therapeutic test has proved that the cephalalgia does not depend upon a cause that can be reached and removed by drugs, the operation may certainly with propriety be recommended.

Considerable sections of the skull have been taken away to permit of the expansion of the microcephalic brain; but though improvement in mental condition in certain cases has followed such linear craniotomy, at the present time the operation seems to be of very questionable utility. Before it is to be accepted as an advisable method of treating feeble-minded children, further investigation must be made into the causes of arrested cerebral development, and how far it is productive of and how far consequent upon premature ossification of the cranium.

Insanity of traumatic origin has, in a very large proportion of the few cases surgically treated, been much improved or cured, because, we may believe, of relief of "intra-cranial fluid pressure;" and even general paretics have been thought to have been benefited by trephining.

A few years ago, who would have dreamed of opening up the lateral sinus and removing from it a pyogenic thrombus? Yet it has now been done several times, and with success.

In not a few cases, intra-cranial abscesses have been definitely located and operatively relieved.

But the most brilliant chapter in this history of brain surgery in recent times is that relating to tumors. There is set forth in it not only what has been done, remarkable as it is, but also the unity of medicine and the inter-dependence of its various departments. It is because of the work of the anatomist, the physiologist and the pathologist, the neurologist, that it has been rendered possible to locate with close approximation, to exactness, the position of the neoplasm and its character, without knowledge of which, the skill of the surgeon and the most careful operative technique would be of little or no avail. Even the experimental therapeutist has played a part, because of his demonstrations of the influence of morphia upon the intra-cranial circulation. Though in but a small percentage of cases of tumor has it been, or perhaps can it be, practicable to effect removal because of location or pathological character, yet, when it is so, the gain is enormous, even though the relief afforded be but temporary, as in dealing with certain growths it must be.

Much less operative work has been done upon the spine than upon the head. It has had for its object the evacuation of abscesses, the relief of paralysis, and the removal of tumors pressing upon the cord, and has been in a high degree satisfactory and full of promise.

As never before, the congenital malformations, meningocele, encephalocele and spina bifida have been subjected to surgical treatment, and that with an increasing success, as improvements have been made in the methods of execution. Renewed attempts have been made to permanently get rid of intra-ventricular effusions by tapping and drainage, but the results have not been what might be desired, and that whether the old route to the ventricle has been followed, or the new lateral one.

In the special departments, as in general surgery, these last ten years have been busy ones, and each may justly claim that there has been advance made in the recognition of disease, and improvement in its treatment. But consideration of the work done in them does not concern us here.

Any retrospect, be it never so hurried, of the work of the decade furnishes good warrant for pride in what has been, and high hopes of what is to be. The world over, educated minds and trained hands are busy with the problems of cause, of course, of termination, and seeking out surer, safer and speedier means of relief, therapeutic and operative. Week by week, and month by month, what is accomplished becomes free and common property; everything is proven, and the good held fast. What will be the outcome of all this thinking, and experimenting, and operating, and writing, even in the near future, who would dare to predict? American surgeons have had not a little to do with the work in the past. Fellows of our own Association, some of whom have fallen asleep, have been closely identified with the discovery, the early adoption, and the thorough testing of not a few methods of treatment, and we may expect with confidence that it will be with us hereafter as it has been, and yet more.

As an organized body, certain duties rest upon the Association. Representing the surgery of a country of wide extent, and of very varied climate and soil, of a people of many racial origins, there should be conducted by it a series of collective investigations, which, for example, might show the prevalence and, as far as possible, the more remote determining causes of certain surgical diseases, chief among which is cancer; or the influence of the local conditions, as of altitude, of average temperature and of moisture upon the healing of wounds; or of the relative resisting power to the action of morbific organisms of the descendants of immigrants from different nations; still more, members of the several color races, four of which are to be met with within our boundary lines in numbers large enough to be of value in an investigation of this sort. From our meetings, year by year, should go out to the world reports, as it were, of the surgical state of the nation, and, as far as can be ascertained, the reasons therefor as found in place, in race, in occupation and in social position.

In the personnel of the Association, the years that have gone by have brought much change. It could not but be so. Thirty-three of the Fellows have passed away, leaving to us a memory of worth, of learning and of skill. Since our last meeting, Agnew, and Campbell, and Johnston, and Kinloch, and Peck have rested from their labors. Each, honorable and honored, in his own place and in his own way, aided humanity and advanced medicine, and each will long be held by us in kind remembrance.

Dr. John B. Roberts, of Philadelphia, read a paper on

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE LOWER END OF THE HUMERUS.

The following are the conclusions arrived at:

Humerus.—1. In the treatment of fractures of the lower end of the humerus, the divergent angle between the axes of the arm and forearm must be preserved; and hence, dressings which interfere with the normal difference in level of the radius and ulna are not permissible.

2. Fractures of the lower end of the humerus of ordinary severity are, as a rule, more successfully treated in the extended than in the flexed position.

3. Because the "carrying function" is less liable to be impaired.

4. Passive motion at an early date is harmful, and should be deferred until union has occurred and the dressings have been finally removed.

5. Good results as to anatomical conformation and as to

motion are generally to be expected, and can usually be obtained.

6. Recent fractures in which satisfactory coaptation is not obtainable under anæsthesia may with propriety be subjected to exploratory aseptic incisions. Old fractures, in which deformity and impairment of function are marked, may, within certain limitations, be subjected to refracture or osteotomy for the relief of these conditions.

Discussion.

Dr. John E. Owens, Chicago, said that he had never treated fractures of the lower end of the humerus in the extended position. The treatment of such fractures in the extended position seems to recommend itself for the following reasons: In the extended position there is no room in the olecranon fossa for neoplastic deposits; the great superabundance of soft tissues in front of the joint when the arm is flexed marks the symptoms; the soft tissues in front of the arm present more opportunity for laceration and cicatricial contraction; in the extended position no traction is made upon the vessels and nerves; that the natural angularity between the arm and forearm is preserved.

The speaker had experienced considerable timidity in the treatment of these fractures at the elbow on account of the impaired mobility which often results. The natural position of the arm in relaxation is that of flexion. He had treated these fractures in the flexed position. The extended position may cause tilting forward of the upper end of the lower fragment, or its rotation forwards, or hyper-extension may be caused.

Passive motion is resorted to in four or five weeks to an extent short of causing suffering. The material used for the splint is plaster of Paris. He had treated many of these fractures in cases where the injury resulted from railroad accidents, where suits for damages are common, but he knew of no case where the question of defective treatment entered successfully.

Dr. John H. Packard, of Philadelphia, remarked that it was often difficult to tell the exact character of a fracture at the elbow joint even under the most favorable opportunities for examination. He thought that the carrying function was rarely perfectly maintained under any plan of treatment. After fracture running into the joint there is liability to the formation of adhesive lymph. He thought that passive motion should be resorted to before the organization of the adhesive lymph. He advocated treatment of these fractures in the flexed position and described splint of sheet zinc which he had used with satisfaction.

Dr. Charles B. Porter, of Boston, thought that the treatment advocated in the paper violated one of the first principles in the treatment of fracture, that is to place the muscles in a state of relaxation. In the extended position the muscles which should be relaxed are not at rest. He had never seen any statistics in regard to the results of treatment of fracture in extended position, in comparison with those in the flexed position. Until these are forthcoming, the profession will be unwilling to accept this as the best method of treatment. He therefore gave his adhesion to the treatment of these fractures in flexed position rather than extended position. Before the fracture is dressed, it should be adjusted under ether and then not looked at for two or three days, and if found in position not again dressed for a week or ten days. In old fractures where there is sufficient deformity to demand osteotomy, resection of the elbow is better and by it a very useful arm may be secured.

Dr. J. Ford Thompson, Washington, D. C., did not approve of the plan of treating fractures of the lower end of the humerus in a right angle. In his treatment he adopted that plan of treatment which permitted the axes of the fragments being brought into relation with each other. This he had found to be the extended position. In two cases of compound fracture he had been unable to bring the fragments into line until the forearm was extended. The difficulty about the straight position is that it is disagreeable and uncomfortable to the patient. He considered plaster of Paris to be the best dressing.

Dr. A. G. Gerster, New York, held that the bad results which are often seen after fractures at the lower end of the humerus are not necessarily due to the method of treatment. In several cases where he had had opportunity to examine the joint he had found that the trouble was due to the throwing out of callus at points where the callus has been stripped off. Bad results are often due to insufficient examination. Anæsthesia is not employed and the dislocation which may accompany the fracture is not recognized. In the treatment of the fracture after replacing the fragments, such methods must be employed as will hold them in place. The flexed or extended position must be employed as necessary. He had found that as a rule the fragments were best held in place by treatment in extension. He does not employ passive motion and considers it useless and often harmful.

Dr. Stephen H. Weeks, of Portland, Me., said that it was his custom to treat supra-condyloid fractures of the humerus in a position of flexion, but he was satisfied that satisfactory results are secured by different methods of treatment.

Dr. T. J. Dunott, of Harrisburg, thought that the manner in which the injury had been received had much to do with the ultimate result. He was inclined to think that the flexed position would give a good result in many of these fractures associated with severe injuries. He prefers to treat the arm in such a position that the radius and ulna are parallel. In many cases where great injury is done to the soft parts, no splint can be applied, and under such circumstances the arm should be laid on a pillow and lead water and laudanum applied for some days, until the tumefaction gives away. If necessary, incision into the tense tissues is made.

Dr. W. H. Carmalt, of New Haven, said that in some cases the ulna acted as a wedge between the two fragments at the lower end of the humerus, forcing them apart, and reported a case which he had recently treated in the flexed position, using extension by means of weights, and obtained a satisfactory result.

Dr. J. Collins Warren, of Boston, had observed the difficulty mentioned by Dr. Carmalt, but had attributed it to drawing forward of the condyles rather than to sinking in of the ulna. Dr. Bigelow had laid down the excellent rule of going through the movements for reducing a dislocation at the elbow in these cases. In this way the danger of overlooking a dislocation is avoided, and if there is simply a fracture, the manipulations mould the bone into place. The flexed position with an internal angular splint seems to be the best method.

Afternoon Session.

Dr. John B. Roberts, of Philadelphia, read a paper entitled:

THE TREATMENT OF UNCOMPLICATED FRACTURES OF THE BASE OF THE RADIUS.

The following conclusions were presented:

Radius:—1. Fractures of the lower end of the radius vary comparatively little in their general characteristics, because but one form is usual.

2. Muscular action has little, or nothing, to do with producing or maintaining the deformity.

3. Immediate reduction of the fragments is the essential of treatment.

4. Many of the splints devised for the treatment of this fracture have been constructed in ignorance of the pathology of the condition.

5. The ordinary fracture of the lower end of the radius usually requires no splint and should be dressed with a wristlet of adhesive plaster or bandage.

6. When a splint is required, a narrow, short, dorsal splint, fixing the wrist, is all that is necessary.

7. The method of dressing here advocated is the best, because it annoys the patient as little as possible by avoiding cumbrous appliances, and permits free voluntary movements of all the finger-joints.

8. Passive motion is unnecessary until union has occurred and the dressings have been finally removed.

9. Good use of the wrist and fingers is early obtained, and the anatomical conformation is restored as well as, and perhaps better than, by other more complicated dressings.

10. Old fractures, which have been improperly treated by omission of immediate reduction, may with considerable success be subjected to refracture at the end of six or more weeks. At later periods readjustment may be possible only by osteotomy, which is a legitimate means of treatment.

Dr. John H. Packard, Philadelphia, had in 1879 read a paper on this subject before the American Medical Association, in which he took the ground that the great difficulty in many of these cases arose from non-reduction. If the fracture of the lower end of the radius, commonly known as Colles fracture, is once reduced there is little tendency to reproduction of the deformity. Many physicians think that all that is necessary is to apply the proper dressing. The most important step in the treatment is reduction. He did not agree with the fifth proposition that no splint is required. He employs an anterior splint padded to fit the curve of the radius and reaching to the ball of the thumb. The patient can use the fingers freely. In ordinary cases who will take proper care of the arm, this simple splint suffices.

Dr. Chas. B. Porter, Boston, emphasized the necessity for complete anæsthesia, then complete reduction and breaking up of the impaction and then the application of a posterior and an anterior splint; after a week or ten days, he allows motion of the fingers and in two weeks motion at the unit. He considers passive motion unnecessary except in old people where there is a rheumatic or gouty tendency.

Dr. J. Ford Thompson, Washington, dwelt upon the disastrous results that often followed failure to reduce the displacement, or the use of improper dressings. After reduction of the fragments he applys an anterior and posterior splint secured lightly to the arm. He had not found it necessary as a rule to use ether to accomplish reduction. In cases where there was severe pain following the application of the ordinary splint, instant relief followed the application of a plaster splint, the hand being carried well to the ulna side. In several cases where the hands were useless from the inflammation of the sheathes of the tendons he had tried to break these up under repeated administrations of anæsthetics but the results had not been very marked.

Dr. Joseph Ransohoff, of Cincinnati, said that in some cases the reduction could not be effected so readily as had been described. He had had three or four cases in which extension would not overcome the difficulty and in such cases hyper-extension has been resorted to. In the treatment he is partial to Levi's splint. After a week or ten days passive motion is resorted to.

Dr. Chas. B. Nancrede, of Ann Arbor, called attention to the fact that a certain amount of the bone tissue at the seat of fracture was destroyed so that some deformity will necessarily follow. Reduction is the most important measure in the treatment. The fragments are then to be held in place by suitable apparatus.

John Homans, M.D., of Boston, read a paper entitled

FIBROID TUMORS OF THE UTERUS.

Fibroid tumors were defined as aggregations of normal uterine tissues in abnormal situations and masses. They may cause symmetrical or more or less one-sided enlargement; they may be in the walls of the uterus or protrude towards its outside or towards its inner cavity; they may be incorporated with the uterus or connected with it by a broad attachment or by a pedicle, or they may be entirely separated from it and get their nourishment from the vessels of the omentum or mesentery. They may be dense, œdematous, or filled with lymph spaces, or they may in very rare instances be fibro-cystic. It is probable that a certain number of the tumors which have been described as fibro-cystic belong to the class of fibroids with dilated lymph spaces. True fibro-cysts are very rare.

In size these tumors vary from that of a mere dot to masses weighing fifty or more pounds. Their growth is slow. They are of common occurrence. In the past fifteen years the author had seen about five hundred and twenty fibroid tumors.

Operations to relieve women with fibroid tumors are rarely necessary. The writer had operated on only sixty of these five hundred and twenty cases, eleven per cent. The conditions which should guide us in recommending removal of the tumors are, when they threaten life by hæmorrhage; when they are unbearable from their weight or the inconvenience they cause, when in a young woman they cause distress and shame from the alteration in her figure, when they cause much pain, when they cause serious obstruction of the circulation, or interfere with the action of the digestive or elliminative organs; when they cause obstruction of the bowels or when their pedicles have become twisted and sometimes the whole uterus becomes twisted on its axis.

Death by hæmorrhage is rare. The speaker knew of only three instances. In fibroids complicating pregnancy, the tumor may threaten to render delivery impossible but nature will generally get the obstruction out of the way if you give her a chance.

The solid fibroid tumors rarely have adhesions and are removed without much difficulty. Of fibro-cystic tumors the speaker had met with only eight in the 520 cases. None of these were successfully removed. One woman recovered from an incomplete operation. The others all died. The author had reported an extraordinary case of twisting of the uterus as the pedicle of a large fibroid tumor. The uterus was twisted one and a half times on its axis. The case was fatal, no operation having been done.

The natural history of ninety per cent. of fibroid tomors is to remain stationary after reaching a certain size, and after the menopause to become cretaceous and atrophied. About ten per cent. require removal. The average age at which the speaker had operated was 39 years.

Treatment by ergot alone is usually ineffective; combined with curetting it helps to stop hæmorrhage. Treatment by high doses of electricity *a la* Apostoli, sometimes stops hæmorrhage, almost always relieves pain and gives strength, but rarely diminishes the size of the tumor. In four cases the speaker had practiced removal of the ovaries for the cure of fibroid tumors. In one woman 44 years old, the tumor disappeared in a few weeks and menstruation at once ceased. In another 33 years old, the catamenia gradually ceased after three years and the tumor remained about the same. In another 34 years old there was irregularly recurrent bleeding for eight months after operation. A fourth case 36 years old was not all relieved by the operation. He was inclined to regard this method as unreliable.

Curetting often cures the hæmorrhage completely. This is followed by the application of tincture of iodine. The surgical treatment at the present time is almost wholly by removal of the tumor with or without the uterus. If the tumor has been protruded into the cavity of the uterus it should be enucleated and removed under careful antisepsis. Other tumors requiring removal must be removed by abdominal section. The operation may be finished in several ways. Sometimes the wound in the uterus can be closed by stitches or the pedicle may be treated by the extra peritoneal method after constriction with the serre-hœud. Sometimes the stump is simply tied as is the pedicle of an ovarian tumor and then dropped. Sometimes the stump is turned into the vagina. All the different methods depend for their fundamental success on asepsis and on securing the vessels of the broad ligament, no matter in what way the pedicle or neck or body of the uterus is ultimately disposed of.

The condition of most patients from whom fibroid tumors have been removed is very comfortable. Some suffer from "hot flashes". Others grow extremely fat. A certain proportion, particularly those in whom the pedicle has been treated extra peritoneally, suffer from ventral hernia.

Sometimes the bladder is cut off by the wire ecraseur, but in the only case he had seen, the bladder healed in a few weeks by keeping it drained and during the ten years that have elapsed since the operation, the bladder has been perfectly normal. The length of the incision does not complicate the operation provided there are no adhesions. Very rarely, insanity follows the removal of a fibroid, as it does other surgical operations. The author had never seen this complication follow hysterectomy. He has seen two cases of tetanus in the cases of other operators, but had had no case himself after hysterectomy. He had had one case follow ovariotomy. He invariably sees that patients who have recovered from abdominal hysterectomy are fitted with a firm abdominal supporter and impresses upon them the necessity of being careful about carrying heavy loads or straining themselves.

Discussion.

Dr. A. Vander Veer, Albany, said that in looking over his notes, he had found that the age from 38 to 48 years has been most prolific in the development of these tumors. The hæmorrhage which is usually the symptom that attracts the attention of the patient is dependent not so much upon the size of the tumor as upon its location. The hope that after the menopause is reached the fibroid will subside is not always verified. In some cases, the tumor seems to take on a more active growth at that time. As to treatment, curetting with packing with iodoform gauze will often stop bleeding. Where this fails, in small fibroids, oöphorectomy invariably cures except in soft myomas. The danger in treatment rests with the size of the tumor. It is the large ones that give the mortality after operation.

Dr. J. Ewing Mears, Philadelphia, held that where the only reason for the removal of the tumor was the large size of the abdomen, giving rise to unpleasant remarks, we should not be guided by the patient's desire that the operation should be done. He related the case of an unmarried woman, who desired the growth removed on account of the distention of the abdomen which it produced. He refused and she passed into the hands of another practitioner, who did operate, the patient dying five hours later. Dr. Mears divided these cases requiring operation into two classes. We are justified in operating where the hæmorrhage endangers life. Second, we are justified in operating when the pressure symptoms are such as to make life unbearable. There are, however, many cases in which, under palliative treatment, life may be prolonged, the patient rendered comfortable and be able to enjoy life. He had found electricity palliative, but not curative. The tumor is sometimes reduced in size.

Dr. George W. Gay, Boston, spoke of the treatment of fibro-cystic tumors, and referred to the use of tapping. He reported one case in which he began tapping in 1879, repeating it every two or three weeks for four years; ninety tappings in all were made. The patient is now in good health, with a large abdomen, but has not been tapped for years. Other similar cases were reported.

Dr. Robert Abbe, New York, referred to the value of the Trendelenburg posture and the early securing of the arterial supply of the uterus in these operations. He was rather surprised at Dr. Homan's assurance that death from hæmorrhage was rare. He had thought the contrary. It is the symptom that frightens the patient and alarms the surgeon. He had had fair success with electricity and would advise it in many cases. The tumor will grow but the hæmorrhage will cease.

Dr. John Homans, Boston, said that the use of strong currents of electricity to the interior of the uterus caused some change to the mucous membrane, checking bleeding, but it did not prevent conception. It was his custom to advise patients with fibroid tumors not to marry. Cases bearing upon this point were related.

The Association then adjourned until Wednesday morning.

WEDNESDAY.

The morning session was given up to a visit to the Massachusetts General Hospital, where a number of interesting cases were shown and the methods of work demonstrated.

AFTERNOON SESSION.

Dr. Dandridge, of Cincinnati, read a paper on

THE SURGERY OF THE TONGUE.

The paper was confined to a consideration of operative procedures in malignant disease. Our knowledge of lingual cancer was first reviewed. As a rule it appears in the form of epithelioma. It runs its course in about a year and a half. In many cases it develops from an indifferent lesion which has been subjected to continued irritation. Neighboring glands are usually affected, and this may occur within three months, or not for six or nine months after the appearance of the disease. In ulcerated epithelioma the diagnosis will most often hesitate between that and tubercular and syphilitic ulcer.

The history of operations of cancer of tongue was then considered and the author expressed his agreement with the following propositions laid down by Treves:

1. The organ should be removed by cutting with the scissors or knife.
2. The removal should, as a general rule, be effected through the mouth.
3. Every means should be taken to reduce the hæmorrhage to a minimum.
4. When the floor of the mouth is involved, or the glands extensively involved, the incision should be carried out through the neck.

The following methods were then described in detail: Whitehead's, Mordant Baker's, Kocher's and Volkmann's.

Whitehead's: In this operation a gag is used, care being taken to avoid pressing back the jaw and impeding respiration. The patient is in a sitting position. A ligature is passed through the anterior part of the tongue and scissors are used for the sections. If the frænum and the anterior pillars of the fauces are completely divided, the tongue can be drawn freely from the mouth. The organ is then separated by free cuts with the scissors until the main artery is reached. This is seized with forceps before division. Before completely severing the tongue, it is desirable to pass a loop of silk through the glosso epyglotedian fold, in case it may become necessary to make traction on the posterior floor of the mouth. The parts are then rendered as aseptic as possible by swabbing over with 1–1000 biniodide of mercury solution and painted with iodoform styptic solution—Friar's balsam in which the spirits are substituted by a concentrated solution of iodoform in ether, one part in ten of turpentine having been added to the ether. This varnish is repeated daily. The patient is not kept in bed, but encouraged to go into the open air. Whitehead has reported 104 cases of total removal of the tongue by this method with 20 deaths or 19.2 per cent. Of 61 patients 15 survived the operation one year; 4, two years; 2, three years; 4, five years, and 1, six years.

Baker's operation: In this operation two threads are passed half an inch from the median line of the tongue on each side. The attachments of the tongue on the side are divided with scissors, keeping close to the lower jaw. The mucous membrane is next divided along the median line and the two halves of the tongue separated by the finger. The diseased half of the tongue is then removed with the ecraseur. After this, glands should be searched for and removed either from the floor of the mouth or by external incision.

Kocher's operation has been commended in cases in which the floor of the mouth and the sub-maxillary glands are involved, but is too serious an operation for cases where the disease is confined to the tongue. Tracheotomy is first done and the fauces plugged. An incision is then made along the anterior border of the sterno-mastoid muscle. From the first, an incision is made from the middle of the sterno-mastoid muscle to the hyoid bone and along the anterior border of the digastric to the jaw. The flap is turned up and the facial artery and vein and the lingual artery tied. The sub-maxillary fossa is then completely cleaned out. The attachments of the tongue are now divided and it is drawn through the opening and removed either in part or in whole by scissors or galvano-cautery. If the whole tongue is removed the lingual artery of the opposite side must be ligated through a separate incision. The tracheotomy tube is allowed to remain and the wound is kept packed with gauze soaked in carbolic acid solution. This is changed twice a day, at which times food is given. In fourteen cases thus operated on there was one death.

Volkmann's method has been attended with extraordinary success, there having been only two deaths in ninety-one operations. The patient is seated in a chair. If the tongue can be brought forward, a resection is made with knife or scissors and the mucus membrane brought together, or if a strip of healthy tongue is left it is turned around so as to make a short, broad organ. If the disease is too extensive to admit of this method a traction thread is passed through the tongue and it is drawn forward. The canine or first molar tooth is extracted, and the incision made downward from the corner of the mouth and the lower jaw divided. The portions of the bone are separated and the attachments of the tongue divided. The cut surfaces are covered with mucous membrane and the bone wired. A drainage tube is placed in the tonsillar fossa and brought out at the lower portion of the incision.

In the after treatment of removal of the tongue for cancer, the three great factors are, 1. Let the patient be well fed. 2. Let all discharges escape from the mouth. 3. Keep the cavity of the mouth sweet and clean.

The author next referred to the palliative treatment to be employed in cases where operation was not indicated or where the patient refused surgical interference. For the pain a powder consisting of iodoform one grain, morphine one-sixth to one-half a grain, borax three grains, has been recommended applied directly to the painful spot. Cocaine has naturally been resorted to either by application to the surface or by hypodermic injection, but there is danger of the establishment of the cocaine habit. The excision of a portion of the lingual nerve was highly recommended, but the relief thus afforded may be only temporary. For the relief of salivation and fetor various antiseptic mouth washes may be employed. Where there is difficulty in swallowing on account of the pain, relief may be afforded by painting the surface freely with cocaine just before the administration of food, or a soft rubber tube may be passed into the œsophagus.

The following conclusions were considered justified:

1. Sufficient experience has been accumulated to show that the removal of cancer of the tongue prolongs life and adds to the comfort of the patient and further affords a reasonable hope of permanent cure.
2. All operations should be preceded by an effort to secure thorough disinfection of the mouth and teeth.
3. In the treatment of continued ulcers and sores on the tongue, caustics are to be avoided and all sources of irritation removed.
4. Persistent sores on the tongue, should be freely removed by knife or scissors if they resist treatment.
5. When the disease is confined to the tongue, Whitehead's operation should be employed for its removal.
6. In this operation, the advantage of preliminary ligation of the lingual artery is not definitely settled, but the weight of authority is against its necessity.
7. The advantage of leaving one half the tongue in unilateral disease, must be considered undetermined, but the weight of positive experience is in its favor. In splitting the tongue into lateral halves, Baker's method of tearing through the raphe should always be employed.
8. A preliminary tracheotomy adds an unnecessary element of danger in the removal of the tongue in ordinary cases.
9. When the floor of the mouth has become involved or the glands are enlarged Kocher's operation should be employed, omitting the spray and preliminary tracheotomy.
10. Removal of the glands by a separate incision after the removal of the tongue, must be considered insufficient.
11. Volkmann's method still rests on individual experience. Its just value can not be determined until it has been subjected to trial by a number of surgeons.
12. Thorough and complete removal should be the aim of all operations, whether for limited or extensive disease.
13. By whatever method the tongue is removed, the patient should be up and out of bed at the earliest possible moment, and should be generously fed.

Discussion.

Dr. D. W. Cheever, of Boston, referred to the question of diagnosis of ulcers of the tongue. In the first place we have dyspeptic ulcers. These appear in successive crops. They are not indurated and can be made to heal by simple treatment. Secondly we have the syphilitic ulcers. Previous history is at times of service. In doubtful cases two weeks of anti-syphilitic treatment should be employed. Third, lupus or tubercular disease; this is not so common as cancer. The test of the examination for the bacillus is not always successful. The tubercular ulcers form and reform; some heal and leave scars. Cancer does not heal, but goes on extending. In lupus the sub-lingual and sub-maxillary glands are early infected. True cancer is almost always at the side of the tongue; the infection of the glands is usually speedy.

While he advised removal of enlarged glands he did not think that the neck should be treated as the axillæ. As to duration, he thought that malignant affections of the mucous membrane are more speedy in their recurrence than malignant affections in the skin and glandular structures. In cancer of the tongue the disease, as a rule, recurs in four to six months. In simple cancer of the tongue without gland involvement, preliminary tracheotomy is not needed. He operates with the patient in the sitting position and not thoroughly etherized. He had never tied the lingual artery for cancer. The partial amputation of the tongue where the disease is limited, seems to have been as successful as the total removal. Recurrence is almost always in the glands and rarely in the stump. Reference was also made to the remarkable recovery of the power of talking in cases where the tongue was completely removed.

Dr. L. McLane Tiffany, Baltimore, said that in considering the operative interference we should distinguish between cases where the disease involved the anterior portion of the tongue, and where the disease has begun more or less posteriorly and there is glandular involvement. In the latter case he prefers division of the lower jaw, either at the symphysis or at the side. He thought it wise to remove the glands beneath the tongue even if not enlarged. In this way we get rid of one of the routes of systemic infection. Where the posterior portion of the tongue is involved, permanent recovery is rare; where the glands are involved it is still more rare. He had obtained his best results where he had divided the jaw and secured drainage from below. The incision is not closed and ample opportunity for drainage is provided. The operation is done with the patient on the side, and the head near the edge of the table, full anæsthesia with chloroform being employed. Where the tongue is excised for tubercular ulceration, the ulcer rarely recurs although the general tubercular disease may progress.

(*To be concluded.*)

MISCELLANY.

Twenty-Second Anniversary of Mitchell District Medical Society will be held at West Baden Springs, Ind., July 7 and 8, 1892. *Gentlemen who will read papers before the Society are requested to notify the secretary.*

Geo. W. Burton.

British Medical Association.—Sixtieth Annual Meeting.—The sixtieth annual meeting of the British Medical Association will be held at Nottingham on Tuesday, Wednesday, Thursday and Friday, July 26, 27, 28 and 29, 1892.

President, John Roberts Thomson, M.D., F.R.C.P., Consulting Physician Royal Victoria Hospital, Bournemouth; President-elect, Joseph White, F.R.C.S., Edin., Consulting Surgeon Nottingham General Hospital; President of the Council, W. Withers Moore, M.D.. F.R.C.P., J.P., Consulting Physician Sussex County Hospital; Treasurer, Henry Trentham Butlin, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, E.C.

An Address in Medicine will be delivered by James Cuming, M.D., Professor of Theory and Practice of Medicine, Queen's College, Belfast.

An Address in Surgery will be delivered by W. H. Hingston, M.D., Montreal, Canada, Surgeon-in-Chief, Hotel Dieu, Montreal, Professor of Clinical Surgery, Laval University.

An Address in Bacteriology will be delivered by German Sims Woodhead, M.D., F.R.C.P., F.R.S.F., Director Research Laboratory Conjoint Board of Royal College of Physicians and Royal College of Surgeons, England.

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ADDRESSES.

SOME MOOTED POINTS IN OBSTETRICS AND GYNECOLOGY.—PRESIDENT'S ADDRESS.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

E. E. MONTGOMERY, M.D.,
OF PHILADELPHIA.

Gentlemen:—It is with particular pleasure that I come to preside over the destinies of this vigorous Section at the meeting of the Association in this the City of the Straits. The number of titles presented the Chairman to form a program demonstrated that The Association is not losing interest in the special work of this Section. It was found necessary to decline almost enough papers to have formed an addiional list as large as the one we present.

In preserving the work of the Section, the plan instituted last year of printing the papers and addresses read before it in a separate volume, was a step n the right direction, but unfortunately it is rendered almost worthless by the absence of any index. The busy student, unless aware that it contains certain articles is not likely to scan its pages to ascertain whether it contains the particular knowledge he desires.

It is also unfortunate that we cannot secure and preserve the discussions which are called forth by papers presented—a discussion which frequently contains material more valuable than the paper or address from which it originated.

Through the assiduous enterprise of Dr. Manton, the Section will have the privilege of enjoying a special dinner, during which we will be able to become better acquainted and cultivate to a greater degree the social work of the Section.

In considering a subject for an address to this body, I felt I could more profitably employ your time by discussing some of the mooted points in obstetrics and gynecology than by the presentation of a paper upon any special subject.

It is true that some of the subjects I have chosen may seem trite, but it cannot be said they are unimportant, and unworthy of careful consideration.

It is with hesitancy I consider some, for the reason that they will be more extensively and ably discussed in papers that are listed for your appreciation.

Cæsarean Section versus Craniotomy.—Under cruder methods of procedure a comparatively low valuation was placed upon intra-uterine life. We need but to review the statistics of the earlier British obstetricians to see in how much larger a ratio the life of the child was sacrificed than resort was made to the use of the forceps. As this instrument was more frequently used, the number of instances in which it was found necessary to destroy the child was greatly diminished. With the knowledge secured through the practice of antiseptic measures, the term of human life has been lengthened and the importance of the unborn individual has obtained a higher appreciation. The obstetrician more and more recognizes that in every case of labor, there are two individuals to be considered, each of whom must be afforded a chance for life.

In view of the safety of induction of premature labor, of the decreased mortality of the modified Cæsarean and Porro operations, it has become a serious question in the minds of many of our best practitioners, whether the living child should ever be subjected to embryotomy.

It is a source of continual opprobrium to our profession that we must sacrifice life to save it. With the reduced mortality of the Cæsarean procedure experienced by Zweifel (1 in 18), it no longer seems just that the life of one of the interested individuals should be destroyed. The responsibility of parentage, the obligation to the unborn, both of physician and patient, should have a higher standard of appreciation. We would urge that craniotomy in obstructions of the pelvis, only be elected when: 1, the child is certainly dead and its delivery unmutilated would endanger the vitality of the maternal tissues; 2, the child still living, after repeated mechanical efforts to deliver, and the physical signs demonstrate that the child is too feeble to long survive its birth. The maternal peril should not be increased, or comfort lessened, when it is evident the child has no chance of surviving; 3, the existence of hydrocephalous or other irremediable disease in the fœtus.

The choice between the Cæsarean and Porro operations has been much discussed. The advocates of the latter procedure claim that it lessens the danger, by the removal of the large absorbing surface of the body, obviates the escape into abdomen of fluid from the uterus and saves the patient from subsequent recurrence of pregnancy. Its opponents reply that an operation properly performed, should leave the cavity in as good condition as after an ordinary labor; the uterus, carefully sutured, quickly unites, rendering leakage into abdomen extremely improbable.

The prevention of subsequent pregnancy is not always desirable even in rachitic patients, as it has been recognized that their defects have no special influence upon the health of their offspring.

The danger in secondary Cæsarean operations is greatly lessened.

The statistics collected by Harris have demonstrated that this operation has not been attended with as favorable results as the modified Cæsarean. It is indicated in the presence of large fibroid growths, or where the patient has been long in labor and the uterus has become bruised and partially devitalized, or in the presence of beginning sepsis.

Placenta Prævia.—There is no condition, probably, which has given greater anxiety or more varied discussion than the attachment of the placenta in the lower segment of the uterus. When we consider the danger to the individual arising from the progress of such a condition, it seems unwise to permit her to be subjected to it, if there is any possible means of its avoidance. Where it has been demonstrated that the placenta occupies the position known as centralis, what possible advantage can be urged in permitting the patient to go on to near full term with a possibility of recurring hæmorrhages, any one of which may prove fatal, before a physician can be secured. In such cases it is very rare for the child to be delivered alive, and consequently for the slight possibility there is of its being saved, the life of the woman should not be imperilled.

The better plan of treatment would seem to be that urged by Wyder. Secure dilatation of the uterus sufficient to permit of version by the Braxton Hicks method, then drag the limbs into the cervix, which will act as a natural tampon and prevent further hæmorrhage.

The writer was called some time ago to see a woman—the wife of a physician in Lock Haven, Pa. He arrived at 8 A.M., and found the woman had been suffering from repeated attacks of hæmorrhage. Placenta prævia had been suspected, the uterus was dilated sufficiently to permit the introduction of one finger; this was followed by a second, forcibly dilating the uterus until the two fingers were in its cavity, then the membranes were ruptured, by external manipulation, one leg of the child was brought in contact with the internal fingers and drawn into the cervix. By moderate traction the uterus was dilated, and the fœtus delivered; the placenta was removed, uterine contractions secured, and the vagina and uterus irrigated, all being completed in less than three hours. This patient had had two or three hæmorrhages previously, which had led to fears of her being unable to recover therefrom. She was exceedingly weak and debilitated. The child was stillborn, the mother recovered without any untoward symptoms.

According to Wyder, the maternal mortality under the old plan of treatment reached 30 to 40 per cent., while the statistics of the clinics of Schroeder and Gusserow, in which the plan of treatment just considered was followed, the percentage of mortality was 6 to 7 per cent. The infantile mortality under the old methods was from 50 to 70 per cent. Under the new it was but slightly more, being but 70 to 80 per cent., and this mortality is of course compensated by the greatly reduced maternal loss. In addition to the advantage of relieving the patient and physician of every anxiety, it also decreases the danger to the patient from sepsis during the subsequent convalescence.

Sepsis.—The importance of early treatment of septic conditions cannot be too highly appreciated. When we consider the rapidity with which diseased conditions extend from the uterine mucous membrane to that of the tubes, and along the lymphatics subsequently involving the ovaries and peritoneum, we cannot urge too strongly the necessity of prompt measures to arrest the progress of the disease while still with the uterus. Infection of the uterine cavity leads to rapid development of inflammatory changes in the mucous membrane and to arrest of normal processes. Multiplication of germs in the mucosa and repeated absorption of their products into the system, produces all the symptoms of septicæmia. The usual course in such elevation of temperature, is to proceed with frequent intra-uterine irrigation, thus endeavoring to obviate the unpleasant effects of the poison. The difficulty, however, in accomplishing this, or in rendering it thoroughly serviceable, is that we have the membrane of the uterus coated over with considerable debris, which is only superficially affected by the germicidal irrigation. Consequently we would urge the necessity, not only of irrigation, but of thorough curetting of the cavity, scraping away the broken down and infected tissue, doing this either with the blunt curette or with what is a still better instrument, the finger.

Having removed and loosened this tissue as thoroughly as possible the intra-uterine syringe should be used, taking proper precaution to secure a free flow of the fluid from the organ. The irrigation may be practiced by the use of a solution of acid sublimate or peroxide of hydrogen. Where the former agent is used, it should be followed by irrigation with sterilized water, so that the superfluous material which might be absorbed and poison the patient, will be washed away.

The thick, flabby walls of the uterus, lying in contact with each other, leads to blocking up of the uterine secretion in the cavity of the organ and thus promotes the tendency to putrefactive changes. To avoid this, drainage should be secured. It may be done by introducing a rope of iodoform gauze to the fundus of the uterus. This serves an excellent purpose first, in keeping the walls apart, second, it acts as a drain through its capillary action, and third, stimulates the processes of involution by its presence as a foreign body. Where the vagina and uterus have been thoroughly cleansed and prepared for its introduction, the twist of gauze may be left from 48 to 72 hours. Its removal should be followed by careful irrigation and the reintroduction of gauze. In this way the size of the uterus may be reduced to the normal, in a short time.

The serious effect of extension of inflammation from the uterus must impress on the obstetrician the great importance of early treatment. It has been the experience of the writer to have, in several instances, to consider the necessity of operative interference to save the life of the patient. In one instance repeated attacks of chill and fever occurring weeks after the uterus had been curetted and irrigated, led to opening of the abdomen and removal of the ovaries. In one of these a teaspoonful of stinking, greenish-yellow pus was found. The operation was followed by rapid subsidence of all inflammatory changes, and the recovery of the patient.

In another instance, a mass was found in the left side of the uterus, which proved to be a large pus sac and was removed, the patient recovering.

A case was recently seen in the practice of Dr. Parrish, of Philadelphia, in which an abscess had extended into the wall of the uterus. In this patient, one side of the uterus was cut away nearly to the cavity of the organ, the walls sutured, bringing the peritoneum over the denuded surface, and the patient fully recovered. In the presence of such possible results, the patient should not be permitted to go without the disease being attacked in its original site of development.

Endometritis.—In acute chronic inflammation of the non-pregnant uterus, it seems just as important that diseased conditions, wherever possible, may be arrested while confined to the uterine cavity, and not permit their extension to inflammation of the tubes. The treatment in such diseased conditions becomes a serious question how we can best remedy it, and what plan of procedure is least likely to be attended with inflammatory extension. When we come to consider that the uterine canal, abraded of its ciliated columnar epithelium by the catarrhal processes, its glands, stimulated to greater activity, filled with viscid secretion, the mucous membrane of the uterus oftentimes covered with papillary masses, resembling polypi, the surface of the entire canal resembling greatly that of an ordinary sinus, it seems but prudent that every precaution should be taken to correct the condition as early as possible. Here, as in every other sinus, it is important to secure thorough and prompt drainage. The proper plan of procedure then would be, after thorough aseptic precautions, the dilatation of the uterus, curetting of its cavity, washing it out with a disinfectant solution, and then the application of some means to secure drainage. This may be done either by the method of Polk, or that of Wylie and Boldt.

Polk packs the cavity of the uterus with iodoform gauze, trusting to its influence on the mucous membrane to bring about more rapid activity of the uterine circulation, and consequently decrease in the size of the organ. The grooved stem pessaries of Wylie and Boldt also increase the activity of the circulation and promote drainage. These instruments may be worn for some length of time, and under their influence the uterus will become rapidly involuted.

Trendelenburg Posture.—In the various operations upon the pelvic organs, the majority of operators have followed the lead of the pioneers in this field, and placed the patient in the horizontal position. This posture of the patient has, however, been attended with a number of disadvantages. First, the difficulty of illuminating the pelvis and being able to see into the deeper cavity, and thus secure bleeding points. If the operator, having in many cases to depend upon the touch to determine the condition of the broad ligament, should through any misfortune let the ligature slip, allowing a vessel to spurt, quite severe hæmorrhage can take place before he will be able to determine its origin; second, the intestines are very likely to be pushed out of the wound, are retained with difficulty and still further obscure the pelvic cavity. The posture known as the Trendelenburg, and which has been ably advocated in this country by Dr. Krug, of New York, aims to place the patient in a position in which the lower part of the pelvis is elevated at an angle of 45° to 60°; this done in front of a window, permits the light to fall directly into the pelvis when the wound is held open, and at the same time causes the viscera to fall upward toward the diaphragm, preventing them from obscuring the vision. In this posture, the physician and attendants are enabled to look directly into the pelvis, and see the bladder and uterus, the appendages, the existence of adhesions and the relations of the pelvic and abdominal viscera. If coils of intestine are adherent, these points are seen, the enucleation can be accomplished under the eye, and the extent of the involvement readily recognized. If bleeding occurs during the progress of the procedure, it can also be seen, and the bleeding points promptly secured. It has been objected to the plan, that there is great danger of soiling the upper portion of the abdominal cavity with pus; but if the operator is careful in placing sponges around the pus cavity, it can be entirely prevented. Indeed, the intestines can be pushed upward, covered over with sponges in such a way that there is no possibility of any soiling of the peritoneal cavity above the abscess itself.

The cavity thus being freed from contact with pus and blood, the field of operation directly under the view, there is not the same necessity for abdominal irrigation that there would be where an abscess cavity is broken up, and pus flows upon the loops of the intestines and over the entire pelvis and its contents. The position is one that is of great advantage in every operation involving the removal of the uterine appendages. It is almost indispensable in those operations in which the entire uterus is removed through the abdomen.

Hysterectomy versus Supra-vaginal Hysterectomy in Fibroid Growths.—The extra-peritoneal treatment of the pedicle in the removal of fibroid tumors of the uterus has long been recognized as the most effective method of controlling hæmorrhage from the stump. The elastic character of the uterine tissue has been such that the majority of operators have hesitated to trust the ligature to control hæmorrhage in these cases. The extra-peritoneal treatment of the stump, however, has been attended with a very great deal of disadvantage. Not unfrequently the stump is necessarily a short one, the traction upon the vagina and pressure against the bladder is marked and distressing, the size of the stump, filling up a large portion of the lower angle of the wound, necessarily produces a weakened ventrum, and the pressure of the pins upon the abdominal surfaces resulting from the traction of the stump, not unfrequently leads to ulceration. The retraction of the stump following removal of the serre-nœud produces a large cavity, which must heal up by granulation, and thus delay the convalescence of the patient. For this reason, there has been a constant effort upon the part of the profession to avoid the necessity of extra-peritoneal treatment of the stump.

As we have already mentioned, the mortality of intra-peritoneal treatment has been disproportionately large. When we consider that this stump is of no special value and can be so easily removed, it seems singular that it has been permitted to remain so long. To accomplish its removal, however, the better plan of procedure is that instituted by Krug, which consists in throwing about the stump an elastic ligature, or applying a clamp temporarily to the cervix, cutting off the tumor and then opening into the vagina posteriorly, and following this by the separation of the bladder anteriorly until the vagina is reached and the broad ligament ligated on each side, in sections.

To perform this portion of the operation, the Trendelenburg posture is of very great advantage. Krug ligates with silk, leaves his ligatures long and draws them out through the vagina, in this way inverting the edges, while he depends upon drainage by packing the vagina and lower part of the abdomen from above with iodoform gauze. This is withdrawn at the end of a week through the vagina. With this part of his procedure, however, I am inclined to dissent, preferring to ligate the broad ligaments with catgut ligatures which shall be cut short, and then following the procedure suggested by Reed, of suturing the peritoneum over the upper part of the vagina, shutting it off from the peritoneal cavity.

In those cases in which the peritoneum cannot be entirely brought together, and there has been considerable denudation, the vaginal opening may be closed and drainage accomplished by the glass tube, or the gauze twist brought out at the lower angle of the wound. The advantage of such a procedure, leaving the stump, is that the wound will close in a short time, and we do not have the depressed granulating wound to delay the subsequent convalescence and to leave a weakened ventrum during the after years.

Sacral Resection.—Kraske, in 1885, pointed out the accessibility of the middle part of the rectum by a posterior incision, removing the coccyx, and part of the lower two segments of the sacrum. Hochenegg and Herzfeld have demonstrated the application of this procedure to some of the gynecological operations. When we consider the position of the uterus in the pelvis, we can but recognize that the shortest distance to it is directly through the lower end of the sacrum. The application of this operation to gynecological work is necessarily limited, but it is none the less of interest as a method of procedure in some cases which offer complications by the ordinary plans of operation.

The writer has reported two cases in which this operation has been performed for the removal of the uterus. In one the condition was complicated by cancer of the middle part of the rectum, involving the upper part of the posterior wall of the vagina and the cervix. In the operation about 3 inches of the rectum, the upper part of the posterior wall of the vagina, the uterus and ovaries were removed. The patient recovered from the operation, but succumbed six months later from a return of the disease.

The second case occurred in a nulliparous woman, who had epithelioma of the cervix, complicated by a previous inflammation of the tubes and ovaries which had bound them down posteriorly to the uterus. It is recognized that the ordinary vaginal hysterectomy in an undilated vagina, with the uterus, ovaries and tubes bound down by adhesions, would be an exceedingly difficult procedure.

In considering the case, he concluded to perform the operation by sacral resection in preference to opening the abdomen from above. The result was exceedingly gratifying; the tubes were easily reached, readily ligated, the vessels could be seen, the relation of the ureters to the uterus determined, and the organs accordingly very readily avoided. The method of performing the operation has been so thoroughly described in recent publications, that it does not seem necessary to occupy your time further in its description.

College of Physicians and Surgeons, New York.—The chair of surgery at the Medical Department of Columbia University has been made vacant by the resignation of Dr. Charles McBurney. He has been appointed a professor of clinical surgery. A statement has been recently made which if correct will give to Dr. McBurney a very remarkable if not unique record in regard to the surgical treatment of appendicitis: his operations for that disease a few days ago numbered a round fifty with only one death.

ORIGINAL ARTICLES.

THE RELATION OF THE DURATION OF GESTATION TO LEGITIMATE BIRTH.

Read in the Section of Obstetrics and Diseases of Women, at the Forty-third Annual meeting of the American Medical Association, held at Detroit, June, 1892.

BY T. RIDGWAY BARKER, M. D.,
OF PHILADELPHIA, PENN.

A subject which has for its object the more perfect administration of the law and the strengthening of the sacred bonds of matrimony is one I trust, which may be deemed worthy of presentation on an occasion such as this when Science, Virtue and Justice go hand in hand.

That many social laws, though unwritten, are more rigid and unjust than civil ones cannot be gain said, for the prejudiced, self-appointed jury, as is well known, bring in a verdict of guilty or not guilty without listening to the evidence offered by the defence.

This being the case how important is it that the medical profession, and especially the obstetrical department, should be upon its guard lest it thoughtlessly become the "important witness" for the conviction of an innocent person by expressing without qualification, certain facts which while true in the vast majority of instances are subject to wide variations.

Especially is this the case with reference to the duration of gestation, which though indelibly fixed in the mind of every recent graduate as being two hundred and seventy to two hundred and eighty days, will, as his cases of confinement increase in number, be found to be governed by no fixed and absolute law, so far as is known, hence his opinion as to the exact date of the onset of labor is not a whit more accurate than that of the uneducated midwife.

While this ignorance of a common physiological process is to be deeply regretted, yet, when we realize the difficulties surrounding the study of conception we can not but acknowledge that it is a problem which time and painstaking investigation can alone hope to solve. Were fertilization of the ovule coincident with insemination the matter of calculating the date of confinement would be greatly simplified, but no such conclusion is justifiable, for we know that the spermatozoon may live for a week or more in the tubo-uterine canal before meeting and fusing with the female element. Since, therefore, the duration of gestation comprises only the time from conception to the onset of labor and as the first factor is shrouded in mystery the ascertaining of the definite date of confinement must necessarily remain uncertain.

Löwenhardt's observations even go so far as to prove that though conception follow a single coition in two women the same number of days after menstruation, yet there exists no absolute correspondence as to the date of their confinement. The variability as to the length of gestation however, does not depend solely upon this fact for, as we shall see in the cases herein reported, there exists another factor, and that is with reference to the rapidity of embryonic growth and development.

As to the truth of this statement, it cannot be doubted when the obstetrician is continually meeting with women who have been delivered of mature infants after carrying them for only two hundred and forty-two days, while another's term has consumed some three hundred days. If we accept the views held by Schrœder who states: "I do not doubt for one moment that a mature child can be born within two hundred and forty to three hundred and twenty days of the last period," surely no other conclusion can be reached. That unduly advanced intro-uterine fetal development is a necessary proof of prolonged gestation as held by Duncan, one is scarcely prepared to admit, since we have seen that some females require a longer time than others to accomplish the same amount of work, and therefore to declare their offspring illegitimate on this ground would be manifestly unjust. While laws in foreign countries have been passed concerning the legitimacy of infants, as in Prussia, Austria and France, where the maximum limit is fixed at some three hundred days and the minimum two hundred and forty, no such action has been taken in England or America, each case being required to stand or fall upon its own merits.

How important, therefore, is it that the profession in these two countries should arrive at some definite understanding as to what shall constitute a legitimate and what an illegitimate pregnancy.

Should we turn to the laity for an opinion one and all would unhesitatingly declare "nine calendar months", and the unfortunate yet innocent young widow who could not complete her pregnancy in that time would be judged guilty of a lapse of virtue. This is no idle fancy. I doubt not that many of those present have heard the tongue of scandel busily engaged in rending asunder the recent bride's cloak of virtue because, forsooth, she was delivered of a healthy mature infant at the expiration of two hundred and fifty days. The law of the land may declare the child legitimate with all its force but society's verdict is different and mother and offspring must struggle in after life to stem the tide of unjust censure heaped upon them by an ignorant and uninformed public.

Nor is society the only one to take advantage of this distorted fact: husbands from ignorance or otherwise may be lead to challenge the virtue of their wives and so bring ruin upon themselves and their families.

Let the ear of the unfaithful husband but catch a whisper of his wife's supposed infidelity, and one would be lead to presume from his rage, disappointment and mortification, that such a thought as unchastity on his part had never so much as contaminated his breath.

It may be said that these matters have little to do with the subject of my paper, but I refute the charge; they have all to do with it, for they are the roots from which divorce receives its support and nourishment, and upon which the parasite marital distrust sucks from the home all life, love and happiness. That the duty rests upon the obstetrician's shoulders to throw light upon this subject, none, I think, can deny Let us not give the husband and family to suppose that all women are confined in the nine calender months from the disappearance of the last menstruation, but inform them that the period of gestation is subject to wide variations, ranging from two hundred and forty to three hundred or more days. When we have done this, if the woman is not confined at the expiration of the usual period no unpleasant possibilities will arise, either in the mind of husband or friends. Again and again have I been called to see females whose husbands had been absent for several months, six to eight, to explain and account for delay in the onset of labor. "Why is it," I am asked, "that my wife is not confined, her time was up more two weeks ago?"

No less anxious is the wife, who, appreciating the lengthy absence of her husband, fears he may suppose her unfaithful. These are not uncommon cases and only too clearly point to the importance of eradicating the idea that the duration of gestation is limited to the nine historic calender months. As has already been said, the period of gestation is from conception to labor, whenever that may be. In the following report comprising forty-two cases of gestation marked by great brevity or unusual length, I have endeavored to obtain the most accurate information, appreciating the liability for error to creep in, and therefore have excluded all histories that were based on idle supposition. Where the parturient was embarrassed by ignorance or carelessness her statements were deemed unworthy of credence. Furthermore, as the legitimacy of each and every infant was beyond question, the records stand unchallenged.

The weights varied from a six-pound twin to a ten-pound male.

None of my cases herewith given could be considered instances of premature labor as the term is generally understood.

Some females in my report I confined twice and it will be seen how closely the second gestation in point of duration compares with the first.

With reference to twins, of which there are three sets, nothing characteristic is to be learned, save that one was retained in the utero for the usual period, two hundred and seventy-five days, while in case No. 15, labor occurred on the two hundred and forty-second day. Gender seems to have little, if any influence for case No. 1, two females, duration two hundred and seventy-four days, was followed by case No. 15, two females, period two hundred and forty-two days. In a third instance, male and female, the time was two hundred and sixty-five days. Thinking that perhaps age of the mother might have some determining effect upon gestation I have examined my report and find out of forty-two cases, seventeen are over thirty years of age. Of the total number confined twenty-seven were cases marked by brevity, the gestation varying from two hundred and forty-two to two hundred and seventy-four days, while in the remaining fifteen cases the period ranged from two hundred and eighty-nine days to three hundred and twenty-three days. There were between two hundred and ninety and three hundred and twenty-three days, twelve cases; and over three hundred days, six cases.

The latter group comprised only eight females over thirty years of age. The youngest primipara was fifteen, the oldest, fifty-one.

The table includes a list of fourteen primiparæ, five having a long period of gestation and nine short.

The minimum was two hundred fifty-five days; the maximum three hundred and twenty-three. With reference to the placentæ; in twenty-one cases fifteen were normal and six battledore. In the second group of cases no mention is made of this matter by Dr. T. T. Bland, to whom I am indebted for it. In the complete report it will doubtless be noticed that a certain number of days or thereabouts repeat themselves thus, between two hundred and fifty-four and two hundred and sixty-seven there are nineteen. Furthermore, four of this group were confined on the two hundred and sixty-fifth day and four on the two hundred and sixty-sixth. This only goes to prove that the results herein given are not mere "go as you please" statements, but based as far as possible upon reliable data.

No.	Æt.	Class.	Cessation of Menstruation.	Date of Confinement.	Duration of Gestation.	Sex.	Plural Births.
1	28	M.	Nov. 30 . . .	Aug. 31 . . .	274	F. & F.	Twins.
2	. .	"	Aug. 18 . . .	June 3 . . .	289	M.	
3	41	"	May 10 . . .	March 13 . .	307	"	
4	29	"	June 7	March 30 . .	296	"	
5	21	P.	Dec. 24 . . .	Sept. 5	255	"	
6	21	M.	Aug. 4	May 20 . . .	289	"	
7	24	"	Sept. 13 . . .	July 17 . . .	307	"	
8	37	"	Dec. 13 . . .	Sept. 4	265	M. & F.	Twins.
9	27	P.	Jan. 17 . . .	Oct. 10	266	M.	
10	31	M.	April 25 . . .	Dec. 29 . . .	248	F.	
11	23	"	June 15 . . .	April 4 . . .	293	M.	
12	36	"	Aug. 5	June 2	301	"	
13	30	"	Sept. 16 . . .	May 28 . . .	254	"	
14	34	"	Sept. 6	July 1	298	"	
15	32	"	Nov. 15 . . .	July 15 . .	242	F. & F.	Twins.
16	31	"	Oct. 8	Aug. 10 . . .	306	M.	
17	21	P.	Feb. 2	Oct. 18 . . .	258	F.	
18	22	M.	March 2 . . .	Nov. 9	252	"	
19	21	"	March 20 . .	Jan. 8	294	"	
20	18	"	Nov. 2	July 27 . . .	267	M.	
21	32	P.	Jan. 12 . . .	Nov. 1	293	F.	
			Group 2.				
22	17	P.	July 7	March 29 . .	265	. . . . . .	
23	51	"	Jan 5	Nov. 3. . . .	292	. . . . . .	
24	23	"	April 14 . .	Dec. 31 . . .	261	. . . . . .	
25	40	"	July 1	May 20 . . .	323	. . . . . .	
26	18	"	June 11 . . .	March 1 . . .	266	. . . . . .	
27	29	"	Nov. 3	Aug. 1	271	. . . . . .	
28	16	"	Sept. 5	May 30 . . .	267	. . . . . .	
29	28	"	Oct. 12 . . .	July 30 . . .	291	. . . . . .	
30	22	"	Aug. 9	May 2	266	. . . . . .	
31	40	"	Jan. 1	Oct. 29 . . .	301	. . . . . .	
32	39	M.	July 4	March 21 . .	260	. . . . . .	
33	15	"	Jan. 1	Sept. 28 . . .	270	. . . . . .	
34	30	"	March 3 . . .	Nov. 27 . . .	269	. . . . . .	
35	41	"	Jan. 14 . . .	Oct. 4	263	. . . . . .	
36	20	"	Aug. 1	April 24 . . .	266	. . . . . .	
37	38	"	Feb. 21 . . .	Nov. 13 . . .	265	. . . . . .	
38	30	"	July 4	March 28 . .	267	. . . . . .	
39	25	"	Aug. 9	May 1	265	. . . . . .	
40	29	"	April 20 . . .	Jan. 9	264	. . . . . .	
41	33	"	Oct. 10 . . .	July 4	267	. . . . . .	
42	27	"	May 7	Feb. 1	270	. . . . . .	

When we study this report in detail, comprising forty-two cases of confinement, selected from less than two hundred cases, and note the pronounced differences in the duration of gestation can we do otherwise than exclaim with Jaggard: "The real duration of pregnancy in the human female is accordingly an unknown quantity."

What then, may be pertinently asked, is to determine the legitimacy of an infant if not its size, degree of development and the duration of gestation? 'T is true, if we cut away these props we have little to base a diagnosis upon, yet too much reliance can not in justice, be placed upon them, as the evidence I submit will go to prove.

The limit of legitimacy must be extended if we would see justice done to mother and offspring.

Better, far better, that a dozen suspicious cases should be judged legitimate than that one poor little infant should receive the cruel impress of hereditary sin.

Scarcely another word is necessary to show how much this aspect of the subject has been neglected.

False sentiments have been allowed to spring up and develop in the public mind which it becomes the duty of the family physician to tear out by the roots.

Our patients and the public at large should be informed of the great variations in the duration of gestation, and then and not before, will virtue stand forth in all her purity unassailed.

The relation of the duration of gestation to legitimate birth is so close to the hearth-stone of every physician and patient that no apology is necessary I feel sure, for presenting it for discussion before a society such as this which has for its object the making of the human race better and wiser.

THE ALBUMINURIA OF PREGNANCY TREATED BY THE INTERNAL ADMINISTRATION OF CHLOROFORM.—REPORT OF CASES.

Read in the Section of Obstetrics and Diseases of Women, at the forty-third Annual Meeting of the American Medical Association, held at Detroit, June, 1892.

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In the *Southern Medical Journal* for August, 1890, an article appeared from the pen of Dr. A. W. Griggs, claiming excellent results in the treatment of the "Albuminuria of Pregnancy" by the internal administration of "chloroform" in from ten to twenty drop doses in water after each meal and at midnight.

Inasmuch as my own treatment of this condition had not been altogether satisfactory, I determined to give chloroform a trial as soon as an opportunity offered.

As a result of my trial of the remedy I append cases representative of different cases coming under my own observation and that of some of my medical friends.

Case 1.—On November 3, 1890, my first opportunity offered in the person of Miss C., unmarried, æt. 22 years; pregnant about 8 months. Two weeks ago her feet and ankles began to swell and the swelling has gradually increased until to-day she has general anasarca. She is listless and complains of continuous frontal headache and dull heavy pain in the back and lower extremities. Pulse 88, temperature 99, pupils sluggish. Her mother states that during the last 24 hours she had not passed more than a half teacupful of urine (she had been treated for over a week by an irregular). I had her pass her urine and she voided about ʒij. A rough bed side test showed it albuminous (albumun $=\frac{1}{8}$). I ordered her ten drops of chloroform in a tablespoonful of water every 6 hours.

November 4, 2 P.M.—General condition about the same, has passed 16 oz. of urine in 23 hours. Treatment continued.

November 6, 9 A.M.—Pain in head slightly improved, otherwise patient is about the same. Has passed 27 oz. of urine in 42 hours. Dose of chloroform increased to 15 gtts.

November 8, 11 A.M.—Patient much brighter, headache only slight, pain in back and extremities very much improved. Has voided 54 oz. of urine in 50 hours. (Albumen=1-12.) Treatment continued.

November 10, 2 P.M.—Patient very much improved, swelling diminishing rapidly, has passed 80 oz. of urine in 53 hours. She perspired profusely during last night.

November 12, 10 A.M.—General condition good, swelling of face and upper portion of body has almost entirely disappeared. Has passed 78 oz. of urine since my last visit.

November 14, 3 P.M.—Patient says she feels comparatively well only that nasty medicine is beginning to make her sick at the stomach. Has passed 76 oz. of urine since last visit (albumin=1-20). Up until my third visit her parents were entirely ignorant of the fact that she was pregnant and before I had an opportunity of seeing her again they thought it prudent to have her (for the benefit of her health?) visit friends in a distant city. I afterwards learned that she was delivered of a feeble female child (which survived only a few days) on the 7th of December and that nothing unnatural occurred during her lying in.

Case 2.—On the night of February 2, 1891, I was called hastily to see Mrs. C., who was pregnant near unto term in her fourth pregnancy. Her husband stated they had not noticed anything unusual about her and that she had gone to bed apparently in good health, at 9 o'clock. At 11 o'clock he awakened and found her in a convulsion. When I arrived I found her in a semi-comatose condition, pulse 120, temperature 101. I passed catheter and drew off about one ounce of urine. There was no swelling except slight of feet and ankles, no history of suppression of urine. Touch did not reveal any sign of oncoming labor. I gave her a half teaspoonful of chloroform as soon as I could get her to swallow it and repeated the same dose every half hour until four doses had been taken. I left her with directions to give her 15 drops every hour until I returned and in event of another convulsion to call me at once.

February 3, 8:30 A.M.—*Patient* is stupid, answers questions intelligently. Pulse 108, temperature 99½, pupils sluggish. Drew 6 oz. of urine with catheter (albumen=1-10). Continued chloroform 15 gtts. every hour.

6 P.M.—Urine has passed involuntarily, pulse 120, temperature 100½. About ʒj of urine drawn by catheter. Patient very stupid, slight twitching of muscles of face and left upper extremity. Order chloroform in half teaspoonful dose every one, two or four hours as indicated by muscular movements or restlessness.

12 Midnight, patient in labor, os well dilated, cephalic presentation L.O.A. position. 12:30 membranes ruptured and at 12:40 she was delivered of a living male child weighing 8 pounds and 10 ounces. Her lying in was perfectly normal. Abundant secretion of urine and on 5th day there was merely a trace of albumen.

Case 3.—On July 9, 1891, I was called to Mrs. W.; age 20; pregnant eight and one-half months; first pregnancy. She said she was feeling very well, but that her feet and legs were considerably swollen, and she thought she had better see a doctor about them. Her general health was good; pulse, 84; temperature, 98¼; tongue clean; bowels moved every second day. She said she passed her urine very freely and frequently. I told her to send some urine to my office in the evening, and I would call the next day. In the meantime, she might take a small dose of citrate of magnesia. The urine, sp. gr. 1028 (albumen=1-20), a few granular casts.

July 10.—Patient reports having passed 32 oz. of urine in 26 hours; bowels moved once freely; a small quantity of urine had passed at that time, not measured. I ordered 10 gtts. of chloroform, morning, noon, supper and bed-time.

July 15.—Urine passed in last 20 hours, 18 oz.; swelling considerably increased; ordered medicine continued.

July 18.—Urine passed in last 22 hours, 15 oz.; now some puffiness of eyelids; slight headache; ordered 15 gtts. of chloroform every 5 hours.

July 20.—Urine passed in 44 hours, 26½ oz.; considerable swelling of the face, and swelling very much increased in lower extremities; complains of some nausea, and headache much worse; ordered 10 drops of chloroform and a teaspoonful of infusion digitalis every 3 hours.

July 21.—Has not been able to take medicine regularly on account of vomiting; swelling still increasing; headache severe; has only voided about 12 oz. of urine in 24 hours (albumen=⅛); ordered ℞ Mur. Cocaine, grs. ij; Aqua Calcis, ℥ij. ♍. Dose, a teaspoonful every one or two hours as needed for vomiting; chloroform and digitalis to be continued.

July 22.—Headache improved; has only vomited twice; passed 16 oz. of urine in 22 hours; the swelling of lower extremities so great I deemed it prudent to puncture the feet with a surgical needle, making twelve punctures in each foot. Treatment continued.

July 23, 12:30 A.M.—Patient was taken in labor about 9 o'clock; os is dilated to size of silver dollar; cephalic presentation; L. O. A. position; pains strong, bearing and regular every ten to fifteen minutes; 3 A.M., membranes ruptured, os well dilated; 3:35, was delivered of a female child, weighing 5½ pounds; no anæsthetic given during labor; recovery uninterrupted; urine abundant; all trace of albumen had disappeared on twelfth day.

Case 4.—Dec. 27, 1891, 10 A.M., I was called to see Mrs. S. J. L.; pregnant; 7 months in her sixth pregnancy. A history of eclampsia in two of her former labors; called me because she was swelling, and felt very much the same as in her former unfortunate pregnancies. She was anæmic; pulse 110; temperature, 99; tongue furred; urine scant and high-colored; could not state exact quantity passed; diarrhœa; bowels moved eight to ten times in 24 hours. She was generally anasarcous, her feet and legs especially being enormously swollen. Intense headache, and some dimness of vision; subsequent examination showed urine albuminous (albumin=1-12). Ordered 15 drops of chloroform every 4 hours, and brom. potass. and chloral hydrate, aa. grs. x, every 2 hours until pain in head was relieved.

6 P.M.—Patient reports no improvement.

Dec. 28, 9 A.M.—Patient slept about five hours, pain in head much relieved; only took three doses of brom. and chloral; was not able to measure quantity of urine passed on account of diarrhœa. Ordered chloroform continued. Brom. and chloral only if restless or pain in head. Also bis. sub. nit. grs xii every two hours *if needed for diarrhœa.*

6 P.M.—Reports having slept two and one-half hours during day; diarrhœa not so frequent; no headache.

Dec. 29, 2 A.M.—Patient slept from 11 until 1 o'clock, when she awoke and had what the nurse termed a severe *convulsion* lasting about five minutes. Patient is *now* semi-comatose, pulse 140, temp. 99½.—2:10 took a convulsion while I was examining her; lasted three minutes. Administered chloroform by inhalation. At 3:30 slight twitchings of muscles of face occurred. I gave her then a teaspoonful of chloroform by the mouth. She then rested for two hours.

Dec. 29, 9:30 A.M.—*Patient conscious but stupid.* Pulse 114, temp. 99+. I drew three ounces of urine and found some urine and fœcal matter had been passed involuntarily in bed. Ordered bismuth continued as needed and gtts. xv of chloroform every two hours unless patient was sleeping.

8 P.M.—Patient resting easily, has passed urine involuntarily; no diarrhœa. Treatment continued.

Dec. 30, 9:30 A.M.—Patient slept six hours during night. Is perfectly conscious, has slight pain in head. Has passed six ounces of urine in ten hours. (Albumen=⅛.) Treatment continued. From Dec. 30 to Jan. 3, the quantity of urine passed averaged 16 *oz. for the twenty-four hours.* The swelling gradually increased. There were no further signs of convulsions.

Jan. 3, 2 P.M.—Patient is slightly delirious, pulse 124, temp. 99+. Urine passed involuntarily and some diarrhœa in morning. Ordered one-half teaspoonful of chloroform every two or four hours until rest was secured. Nurse reported having only given three doses until Jan. 4, 11:30 A.M., when I found patient rational and in labor. Os dilated; both feet presenting. At 12:10 I delivered her of an hydrocephalic monster. Her recovery was uninterrupted until the 11th day, when a slight attack of phlegmasia alba dolens set in, which somewhat retarded recovery.

Case 5.—Mrs. S.; age 23, pregnant 8 months, in her third pregnancy. In her first pregnancy, I was compelled to induce labor on account of rapid succession of convulsions during thirty-six hours. Second pregnancy was uneventful, no albumen or dropsical effusion occurring. Now, April 5, she is considerably swollen in lower extremities, urine high colored and scant, and on examination albumen=1-10. Ordered 15 gtts. of chloroform four times a day in a tablespoonful of water.

This case residing a distance out of town was to report to me in a few days. She neglected to do so, however, for ten days, when she reported swelling reduced; urine passed from 36 to 40 ozs. in 24 hours, on examination, albumen only a trace. The medicine was discontinued. She was confined on May 1. Her labor and lying-in being perfectly normal.

Several other cases have been treated at my request by medical friends with a view to ascertain results. I regret very much that I have not had the opportunity for observation I thought I might have when I agreed to write this paper. It is a small experience upon which to base an opinion. Taking these cases in connection with a few others of a milder nature I have treated and several cases reported to me kindly by members of the Pittsburg S. S. Medical Society, I am led to conclude that chloroform does undoubtedly do good in some cases while in others it apparently aggravates the trouble. It seems to me whatever its effect may be determined to be upon further investigation, with regard to increasing the flow of urine and decreasing the albumen, that it does have a beneficial effect when given internally in preventing eclampsia.

"INNOCENCE NOT REPENTANCE."—From the *Sanitarian* we learn that the above legend has been suggested, as the appropriate motto for a city's waterworks, by Dr. Kedzie of the Michigan Board of Health.

THE CREMASTERIC REFLEX IN VARICOCELE.

BY THEODORE A. McGRAW,

OF DETROIT.

I wish in this paper to make a short mention of certain observations and theories which I am not yet prepared to publish in full.

The accepted theories in regard to the causation and pathology of varicocele have never been entirely satisfactory to the profession. While it may be admitted that certain anatomical relations, more especially of veins on the left side of the body, may predispose to the disease, and while there can be no doubt of the occasional agency of injuries and venereal excesses in producing it, we may nevertheless acknowledge our ignorance of the exact pathological processes which lead to its development. We cannot explain why of two men of apparently similar constitution and habits of life one should suffer from the disease and the other escape. We may accept as the truth, the statement that the size, winding course and numerous anastomoses of the veins near the testis, their lack of support by the loose and inelastic tissues which surround them; the length and small size of their efferent trunks, the perpendicular course of the left spermatic vein, its right angled junction with the renal and its position under the sigmoid flexure render these veins especially liable to over distention and resulting disease. We may also agree that general debility, sprains, violent muscular exertion and excess of venereal excitement, conduce to the production of variocecele, and yet we have still to account for the fact that multitudes of men whose anatomical formation is precisely similar and who are subjected to the influence of all of these so-called causes, go through life nevertheless untouched by the disease. In other words, the alleged causes of varicocele do not in most people produce varicocele, and unless we are willing to rest satisfied with the vague and unmeaning word "predisposition," we must confess that the essential factor has, as yet, escaped recognition. While we may admit that the particular conditions enumerated above, may influence though not in themselves determine the production of varicocele, there are other alleged causes which must be denied as not proven. Thus the often quoted absence of valves in the spermatic veins is said by Curling, never to occur. He invariably found the valves to be present even though useless from over-distention and enlargement of the veins. Whether the spermatic veins could be rendered varicose through the agency of muscular contraction or by the presence of hernia, tumors, trusses, abdominal belts, and the like must be regarded as more than doubtful.

It has seemed to me that certain physiological influences which affect the circulation of the blood through the spermatic veins have been too little studied in this connection. If we examine the theories which have been promulgated in respect to this disorder, it will be found that certain factors in the local circulation have apparently been altogether overlooked, although they have a most important bearing on the subject. If we omit all considerations of those factors of the circulation of the venous blood, which are common to the whole system, such as the action of the heart and diaphragm, atmospheric pressure and the like, we may say that the local venous circulation is furthered by three agencies: 1. The contraction of the venous walls. 2. The action of the nervous system, and 3: The intermitting pressure exerted on the spermatic vein by the contraction of the muscles which surround them, or are in their immediate vicinity.

In the walls of veins, like those of arteries, there are both longitudinal and circular muscular fibres and elastic tissues. These permit the veins to dilate under the pressure of the column of blood and to contract again, forcing the blood onwards. As long as the venous walls retain their tonicity their contraction will form a most important element in the propulsion of the contained blood. On the other hand, any inherent or acquired defect in their mechanism, would of necessity, seriously impair the local circulation and lead, in itself, to the permanent and incurable distension of the venous walls. There can, in my opinion, be no doubt that many cases of varicocele are due to this cause. Local injuries, such as contusions and sprains may be presumed to act in this way by rendering the veins themselves incapable of performing their duty in forcing their contents on toward the heart. These are the cases in which the ligature by obliterating the vessels altogether, and compelling the blood to seek other and healthier channels, is most effective. The morbid area is here comparatively small, and if other more general causes of trouble are wanting, the operation is effective in causing a radical cure. In another class of cases, however, in which the seat of trouble is also in the venous walls, a cure is vastly more difficult and often impossible. In this class, a very small one, there is a general disposition to varices. The entire venous system would appear to be inherently defective, and the youth, affected in this way, will show early a tendency to dilatation of many veins. The veins of the scrotum, of the rectum, of the legs, and even of the arms will become thin and swollen. I have seen one or two cases of this kind and regard them as practically incurable, for you may obliterate the veins and cut off the scrotum, or do what you will, and the disease will tend to recur. It is remarkable, however, that when this tendency is acquired, later in life, as when old people become affected with varicosities caused by general vascular degenerations the spermatic veins generally escape, even though the scrotal veins become enlarged. At least this is my experience in such cases.

It is uncertain in how great a proportion of cases the etiology of the disorder must be sought for in primary disease of the venous walls. The disease is found only rarely associated with a general disposition to varices. "Landouzy" found only one person in fifteen affected by varicocele who had also varicose veins of the legs, and of twenty other persons who had varicose veins of the legs, not one had varicocele, neither was he able to trace any connection between varicocele and hæmorrhoids. Curling confirms this statement from his own experience.

I have spoken of intermitting muscular pressure as a chief factor in the local circulation of the blood in the veins, and wish to emphasize its importance for the reason that it seems to have been lost sight of in the study of the morbid conditions, under consideration. The assistance given to the general venous circulation by the contraction of the muscles which are immediately adjacent to the veins is well understood. But the fact that the spermatic veins, are peculiarly dependent on muscular pressure for their support has seemed to have escaped observation. My own studies of this subject have led me to the conviction that every man would have a varicocele were it not for the action of certain muscles which continually urge the blood onward, and prevent undue distension of the spermatic veins. These muscles are, first, the cremaster; second, those of the abdominal walls, and third, the tunica dartos of the scrotum. Of these the cremaster is the most important, and it is very clear that its main function has been overlooked by anatomists and physiologists, who ascribe to it only one function, that of raising the testis. A mere superficial study of these muscular fibres, however, show that they afford a most powerful brace and support to the spermatic veins, and assist, by their contraction, most materially, in the circulation of the blood through those channels.

The cremaster muscle consists of a series of muscular and elastic fibres which seem to be a continuation of the internal oblique. They arise from Poupart's ligament, pass in a series of loops of various lengths over and partly around the spermatic cord, and are attached to the pubic bone. The lowermost loops are fastened at their middle to the testis. In a few instances loops have been found to surround the cord, but this is not common, although in all men they are so fastened to the sheath of the cord, that their contraction serves the purpose of a constrictor of the cord and its vessels. In some persons they are large and in others small, and in a few entirely wanting. They are usually most developed in strong, muscular men. They are connected together and to the areolar tissue of the cord by the cremasteric fascia, and their contractions draw taut the sheath of the cord, elevate the testicle and compress the spermatic veins. These contractions take place readily on any sudden irritation of the inside of the thigh, and thus constitute the so-called cremasteric reflex, but they also occur from internal causes and irritations. Their action is assisted to some extent by the contraction of the tunica dartos, which shortens and corrugates the scrotum. The cremaster cannot contract without squeezing the blood out of the veins inclosed between its fibres in front and the inelastic tissue behind, which surrounds the spermatic cord, and which is firmly bound to the overlying muscular fibres. Caught between these opposing forces, the veins become emptied of their blood, to fill again the moment the contraction ceases. Now, this is the true and only important function of the cremaster. The testicle, by its weight, serves as a point of resistance, which enables the muscles to contract more firmly, and it is of course raised whenever the muscles act, but its elevation is only an incident in the exercise of the more important duty which devolves upon the cremaster, that of propelling the venous blood upwards, and relieving, for a moment, the over-distended veins.

The force which it exerts acts from below upwards, and the stimulus which produces its frequent and voluntary contraction proceeds, probably, from the irritation excited in the veins by their over-distension. However that may be, I do not doubt that the external support which the muscle yields is essential to the health of the venous walls, and whenever it is wanting, especially in youth, whether from a defect in the muscle itself or paralysis of the nerves which supply it, that condition is liable to develop which is termed varicocele. In more advanced life, the walls of the veins become firmer and less yielding, and they can better withstand the loss of external support, for it is a curious fact, as I have already said, that these venous degenerations which occur in advanced life, and produce hæmorrhoids and varices of the lower extremities, rarely affect the veins in the cord, although not uncommon in the more superficial veins of the scrotum.

In the inguinal canal, the veins are exposed to the pressure of the ever-contracting abdominal muscles. Here again they receive an invaluable assistance in enabling them to perform their functions. The operation of this intermitting pressure is precisely that which occurs below when the cremaster contracts. During a muscular contraction, which narrows the inguinal canal, the blood is forced from the contained veins in the direction of the least resistance, which is upward and inward. On the occurrence of muscular relaxation, they become again distended with blood, and the constant repetition of these movements makes a most important, and indeed most essential factor in the venous circulation.

It is curious that this very muscular contraction of the abdominal muscles around the inguinal canal has been enumerated as a cause of varicocele, whereas it is doubtful if the circulation of the blood through the spermatic veins could take place without it; and yet it is very possible that the violent and spasmodic contraction of muscles may cause varicocele in this way. A vigorous young man engages in some struggle, such as wrestling or rowing, in which he puts forth all his power in one grand effort. The abdominal muscles contract with great force upon the structures in the inguinal canal, and for the moment close entirely the spermatic veins. At the same time the blood is forced through the arteries in unusual quantity, and the veins below the inguinal ring become turgid and swollen. If now the cremaster is largely developed, and if at this very moment it, in common with other muscles, is put into a violent and almost tetanic contraction, the distended veins caught between the opposing muscles, with no outlet for the contained blood, either burst or stretch beyond the power of recovery.

In the one case there will result an hæmatocele, and in the other a varicocele. It is probably in this way that those cases of varicocele occur, which are attributed to strains. The very vigor of the cremaster would here coöperate in producing a condition which is ordinarily the effect of cremasteric weakness. As regards the third group of muscles which aid the venous flow in the spermatic vessels, the muscular fibres of the tunica dartos, their action is comparatively weak and unimportant. They serve to make the individual more comfortable by holding up the scrotum, and materially assist in the superficial circulation through the scrotal veins, but are not strong enough alone either to support the testis or the deeper veins which carry off the blood.

If now we ask how we can apply these pathological conditions to the study of varicocele, we may conclude that of these muscular groups, the abdominal muscles, whatever their condition as regards size, are ordinarily strong enough and act constantly enough to produce the intermitting pressure which is necessary to force the blood upward after it once enters the inguinal canal, while the tunica dartos is too weak in itself to make much difference in the circulation of the deeper veins. With some exceptions, the cremaster alone is concerned in the pathology of such cases of varicocele as arise from insufficient muscular support. This muscle varies exceedingly in different men; in some it would seem to be nearly absent, and in these, from very childhood the testes hang low and the varicocele begins early, and in many cases on both sides. As soon as the sexual excitement of puberty begins, the veins begin to swell, and the boy of 15 or 16 is already forced to wear a suspensory bandage. If the whole muscle is extremely defective, the cremasteric reflex may be altogether wanting. If only partly developed, we may believe that its defect will produce symptoms which would vary with the loops involved in the defect. Thus, if the long loops which descend upon the testes are present in sufficient volume, but the shorter loops which hug the cord are absent or very weak, the cremasteric reflex might be present in considerable degree, and yet a varicocele develop in the veins from want of the muscular support; while, on the contrary, the presence of the shorter loops might prevent venous disease, even though the testicle itself dragged upon the cord, through the absence of the longer loops which should be attached to the organ and lift it up. There is hardly any anomaly of development which one could think of in regard to this muscle which might not be present, and producing peculiar conditions. The presence of the cremasteric reflex, therefore, would not necessarily indicate the existence of any adequate support to the spermatic vein, nor its absence intimate that that support was altogether wanting. Neither would the absence of the cremasteric reflex and the development of a varicocele necessarily prove that the disorder arose from a congenital deficiency in this muscle, for an acquired paralysis would produce the same result.

I am inclined to think that those causes of varicocele which are ascribed to excessive sexual excitement may be due to a paresis of the nerve which supplys the cremaster. I have never met with such cases myself but find many recorded in practice. One physician told me he had seen four cases which developed in young men immediately after entering upon engagements to marry, presumbly due to prolonged ungratified sexual desire. Whether in such cases, there may be any inherent weakness of the nerves or the muscle itself, must be uncertain, but that sexual excitement alone could not produce the disorder, is sufficiently demonstrated by the experience of the vast majority of men. Varicocele will make its appearance some times in connection with obscure trouble of the nervous system. Dr. Imrie kindly sent a young man of sixteen years to me, with a varicocele of the left side, of some three months' duration. A Jew, he had been circumcised in childhood, both testes hung equally low and as far as the cord would allow. The cremasteric reflex on the right side could be elicited with difficulty and on the left not at all. There was a double varicocele most developed, however, on the left side. The knee reflexes were also wanting and he had suffered for three months from incontinence of urine. I saw the case but once and was therefore not able to study it as thoroughly as I could wish, but it was evident that there was here a paralysis, possibly of spinal origin associated with and probably causative of varicocele. It is possible that reflex irritations like these produced by narrow fore skins or by intestinal worms, may produce the same result. As showing the connection between affections of the cremaster and those of the testes and cord, I may here mention a case now under my treatment of neuralgia of the testis in a man 46 years of age; it began a year ago without apparent cause, in the left testis and of late has occasionally affected the right; the left testis is quite tender and sore, though to the touch not perceptibly altered from the normal. The pains which are nearly continuous are chiefly in the testis and cord but sometimes affect the small of the back. I suspected some spinal sclerosis but could not verify that hypothesis as his knee reflexes were normal and he had no other symptoms. His urine contained nothing abnormal. Now, he had this peculiarity; he had been able to control his powerful cremasters perfectly and jerk his testicles up at will with great power; he did this in my presence, on the right side and I was astonished at the vigor of the contraction. On the left side, however, the ability to raise the testis had failed him and he could produce a contraction of the left cremaster only by moving the two together. Then when the contraction of the right muscle had nearly ceased, one could see an imperfect movement of the left. The cremasteric reflex on the right side was promp and strong; that on the left could not be elicited at all. I fancied that the left veins were slightly swollen and have no doubt that had he been twenty instead of nearly fifty, he would soon have developed a varicocele.

While there are not a few varicoceles in which the cremasteric reflex is nearly or quite normal, in the majority of cases patients show a decided disturbance in the mechanism which produces it.

In how many cases this is due to congenital effects of the cremaster and how many to paralytic conditions, or acquired weakness, I am unable to determine from my inability to complete my observations by the necessary dissections.

It is not easy to obtain autopsies in persons subject to varicocele and I have failed in my efforts in that direction. In operating, however, on a living subject for varicocele, I have noticed carefully the conditions of the cord and its coverings and have rarely found a well developed and powerful cremaster, in marked contrast with cases of scrotal hernia, in which the fibres of the cremaster are often enormously hypertrophied.

It is interesting in this connection to study the relations of hernia to varicocele, and more especially as my observations have led me to take issue with some authorities, who have ascribed to hernia the power of producing varicocele by pressure on the efferent veins of the testis.

I can recall only two cases from my practice in which hernia was associated with undue enlargement of the spermatic veins. They were both cases of small hernia in young men of weak muscular fibre, and in both there could be no pressure on the efferent veins by the easily reduced, small protrusions sufficient to cause venous disturbance. It was evident that both disorders were induced by the same muscular insufficiency.

On the other hand, in operating on very large irreducible scrotal hernia, I have had occasion to remark, as have many surgeons, the great size and large number of the veins around the hernia. I have never regarded these enlarged veins as at all allied in pathology to varicocele. In the first place, the veins in the testes proper rarely are very much larger than common. The hypertrophy, for I consider it such rather than a varicosity, affects principally the veins of the covering of the testes, those which carry back the blood of the cremasteric and pudic arteries; while the veins are very large and numerous, they are not more so than is necessary for the nutritive processes of these enormous protrusions and the hypertrophied tissue, which surrounds them. Such patients have none of the subjective symptoms of varicocele, their testes are not atrophied, and I have no doubt that the cure of the rupture, if it were possible, as it rarely is, would be followed by the gradual recurrence of the veins to their normal condition. On the other hand, hernia and varicocele are both so common as disconnected disorders and are so rarely found present in the same individual as coincident disorders that one is almost forced to conclude that there is some antagonism, so to speak, between the two. I believe that this is the case and that the reason of it is to be found in the processes which take place in the development of the testes. According to Curling, the gubernaculum testis exists from an early period of fœtal life as a soft cord of connective and muscular tissue, which extends from the lowermost point of the testis by three divisions to the inside of Poupart's ligament to the os pubis and to the bottom of the scrotum. He believes that the testis is guided into the inguinal canal by that part which is attached to Poupart's ligament, is pulled through the canal by the pubic portion and is finally drawn into the scrotum by the scrotal portion. In its passage through the inguinal canal, some fibres are detached from the internal oblique muscle and form the loop which lies over the front and sometimes around the cord. It is these loops especially which give support to the veins, and aid in the propulsion of venous blood through them, and a moment's consideration will show that if this description of the process is correct, the strength of the walls of the inguinal canal will be inversely to that of the 'cremaster. If there are only a few fibres detached from the internal oblique the inguinal wall will be stronger, if many are carried down it would, of necessity, be weaker. But strong walls mean less danger from hernia, while a large cremaster means freedom from the liability to varicocele. It is easy to suppose, therefore, that such individuals as are liable to inguinal hernia are less liable to varicocele and *vice versa*. At the same time, it would not exclude the possibility of both diseases occurring in the same individual, if he were a man generally deficient in muscular development. I have been much disposed to doubt all these theories which refer the development of varicocele to pressure of any kind.

The effects of pressure are ordinarily felt only when pressure is long continued and the diseases which arise from pressure, therefore, commonly occur in middle or old age, and we see this exemplified in hæmorrhoids and varices of the leg, which, though not unknown in young persons, are far more common in the aged, but it is notorious that varicocele is a disease of youth and makes its appearance at an age when hæmorrhoids and varicose are rare indeed. The pressure of the sigmoid flexure on the left spermatic vein, which is one of the alleged causes of varicocele, must be vastly greater when the gut is filled with long standing accumulations of fæces, such as occur in cancers and strictures of the rectum than in the occasional constipations of youth, and yet, whoever knew a varicocele to arise from that cause. The constipation of middle aged and old men cause hæmorrhoids, but almost never varicoceles. This has been with me so uniform an experience, that I am disposed to conclude that the theories which refer varicoceles to such causes are due to imperfect observations.

It is, indeed, a question whether the pressure of the bowels on the spermatic veins would not act rather beneficial than detrimental to the circulation of the blood through them. In the first place, they conduct the intermitting pressure of the abdominal muscles through to the veins, and this must be as we have seen, a great aid, and in the second place, they themselves would subject these vessels to an intermitting pressure, as gas and fæces pass through the gut in ever varying quantities. Only in conditions of chronic, irremediable constipation, conditions uncommon in young men, could a bowel exert that dead unyielding pressure on a vein which would cause distension of its distal portion. That the left spermatic vein is ever subjected to that kind of pressure, even when the sigmoid flecture is loaded with impacted fæces is a question of great doubt. That the left vein is more frequently affected with varicocele than the right would seem to me to be the result rather of general than of local conditions. The whole left side of most men is weaker than the right. The left foot is smaller. The left muscles are weaker. It is possible that the left cremaster, under this same law, is, in the vast majority of persons, much weaker than the right, and that the left testis hangs lower for the same reason. It is possible, too, that the walls of the veins themselves on the left side may be weaker and less developed than the vessels of the other side of the body.

To conclude with the summary of this paper, I should say:

1. That the pathology of varicocele is variable, cases differing from one another both as regards causes and pathological conditions.

2. In one group of cases, the fault lies in the walls of the veins which have become weakened either by injury or from congenital or acquired disease. In this group, the cremasteric reflex may be altogether normal.

3. In another class of cases, the primary diseases involve either the cremaster or the nervous mechanism by which it is controlled. The muscles may be congenitally defective in volume, or abnormal in position, or it may be entirely wanting, or, on the other hand, it may be either temporarily or permanently paralyzed. Whatever the nature of the original affection, these cases are marked by a deficiency in the cremasteric reflex, which in some cases may be altogether wanting, and in others, very weak and uncertain. As the greater proportion of varicocele shows this symptom, it is fair to conclude that majority of varicoceles are due to affections of the cremaster. It is important that the whole subject should be studied anew, in the light of pathological anatomy, and it will be well for those who are so fortunate as to secure autopsies in persons so afflicted to bear the matter in mind.

PROF. PARVIN does not believe that properly applied pessaries ever produce cancer. If cancer does follow the use of them, *they* are not the cause of the disease, but the condition must have already existed.

OUR REPUBLIC.—HER CITIZENS AND HER NEEDS.

RELIGION, LEARNING, LIBERTY, LAW. THE FOUR GREAT FORCES OF CIVILIZATION.

An Address delivered before the New York Academy of Anthropology,

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OF BROOKLYN, NEW YORK.

One of the sub-divisions of ethnology is *Government and Laws*, by which the different races are controlled and their prosperity developed, and it is to the subject of the government, laws and prosperity of our Republic and her citizens that I ask your attention. We also find under the head of ethnology *Religion*, and a distinguished ethnologist has said that against men and nations under control of doctrines of this character, the skeptical Greek, the materialistic Roman and the effete Persian were as certain to succumb as though their downfall had been written on their temples by a divine hand.

Professor Max Müller says: "It is language and religion that make a people, but religion is even a more powerful agent than language. Progress is the development of the energies and resources of a nation and the condition of civilization is where all these energies and resources are developed symmetrically and to a high degree, and we find both progress and civilization in their highest state where we find the acceptance of the Christian religion." The greatest men that this country has ever produced, have been churchmen of one denomination or another, Washington, Webster, Clay, Choate and Everett. All history shows that religion has always had an awakening and stimulating influence upon the intellectual powers. It is impossible that a nation should ever strive to imitate that which is its best and not actually grow toward something which is really better. We may be sure that as a teacher of ethics, religion would not so early, and in so many instances have becomes associated with government had it not been observed that the duties of man to man gained in observance through this connection. Even the faiths of the lower races have, in my opinion, acted as a lever, lifting them toward a higher ethical life. A perfected social rule in necessary and good; literature, music and art is necessary and good, but religion is absolutely necessary to the symmetrical development of any nation, in accordance with the laws of progress, up to a complete civilization. Alexander of Macedon and Julius Cæsar; Confucious and Mohammet; Phidias and Raphael; Plato and Bacon; Homer and Shakespeare all availed themselves of the receptivity to great thoughts and ambitions in the national and racial mind at the time to make their labors effective; and today, the wisest and most far sighted statesmen of our Republic will work together to teach the people that religion, learning, liberty and law are the four great forces of civilization. The world today is going through a great process of evolution, which recognizes the equality of all men before the law, and the right of every people to govern itself; the forms of monarchy and aristocracies will yield to republican governments, and international laws and arbiters will do away with wars and the necessity for maintaining standing armies, and religion must be and is the great conservative principle by which, during this evolutionary period, social order and a perfected social rule shall be maintained and upon which the destinies of republics yet unborn will in a great measure depend.

HISTORY OF OUR REPUBLIC'S POLITICS.

When Niobe saw her fair sons and daughters falling under the swift darts of the angry gods she wept herself to stone, but the genius of America, whom it is the pride of her sculptors to represent as wearing the Phrygian cap of liberty on her brow, and trampling upon broken chains with her feet, and bearing aloft the ægis of eternal justice, surrenders her children, without remorse, to national death. She belies her symbols, she suppresses her inspirations; she opens the gates of the coming centuries to the advent of a remediless political bondage at the hands of the official or machine politicians, who care nothing for truth or convictions, while they have a ravenous appetite for distinction and provender. Would we could awaken from the dead, the once great and accomplished leaders who now sleep in honored graves; but no exigences of state will ever again awaken the solemn eloquence of Webster, nor will the clarion voice of Clay ever again summon his lieges to the battle; neither can we recall the model Democrats of the nation: Jefferson, who wrote the Declaration of Independence; Madison, who was one of the ablest expounders of the Constitution, or Macon, who tolerated no injustice in legislation. The ambition and hope of the Fathers of our yet young Republic, with her future in her own hands, was, that she might see the States which were soon to become the children of her family, growing up about her in prosperity, love and vigor. She could watch over their cradles and keep them from harm; she could nourish them with manly strength; she could form them by her wise and tender solicitude, to a career of exalted worth and greatness. A new page in the history of mankind appeared to be opened. A page unblotted by the blood stains of tyranny, which mark the rubrics of the past, and destined to be written over, only by the records of an ever maturing nobleness and grandeur. This was the hope of the Fathers of our Republic, who laid the beams of her habitation deep in the principles of virtuous freedom and bequeathed to her the heroic precedent of single hearted devotion to justice and right. All honor to Abraham Lincoln and the American people that we have rescued the land to freedom from slavery. Let us now rescue the Republic from machine politics and perpetuate, as far as we in this generation can, for centuries to come, the early virtues of our Republic, which were marvelous in their dignity and force. The earliest parties known to our history were those of the colonial times, when the grand debate as to the rights of the colonies was getting under way and all men took sides either as Whigs or Tories. They had imported their distinctive names and to some extent their distinctive principles from the mother country, from the iron times of Cromwell and the Puritans; but, in the progress of the controversy, as it often happens, they were led upon wholly new and vastly broader grounds of dispute than they had at first dreamed. The little squabble as to the limits and reaches of the imperial jurisdiction, expanded into a war for national existence, nay, for the rights of humanity, and what was at first a violent talk only about stamp duties and taxes on tea, mean and trivial even its superficial aspects, concealed the noblest political theories, the sublimest political experiments, that had yet been recorded in the annals of our race. The Whigs of the revolution in crushing the Tories of that day, touched the secret spring of a new creation. They gave to the world a new idea, the American idea; the conception of a state founded upon the inherent freedom and dignity of the individual man. It seemed as if, gathering out of the ages all the aspirations of great and noble souls, all the yearnings of oppressed peoples, they had concentrated them into one grand act of emancipation. They actualized the dreams of Time, and in the latest age of the world, and on a new continent introduced, as they fondly supposed, that reign of heavenly justice which the primitive golden ages had faintly foreshadowed, which patriots had so struggled and sighed for in vain, and which the political martyrs of every clime had welcomed only in beatific vision. It was this patriot party of the revolution which gave the inspiration and impulse to the nation, which found its character and sentiment and erected the standard of opinion, designed for some years at least, to be the guide in all movements. It fired the national mind by the warmth of its convictions, or rather by the fiery earnestness with which it fought its way to success, into the single thought of democratic freedom, which has been the ground and substance of our national unity. The medley of settlers, chance-wafted hitherward, from the several corners of Europe, like seeds borne by the winds, were nourished by it into an organic whole, and have since been retained by its original influences, under all diversities of constitution, climate, and interest in the coherence and uniformity of a national being. We are therefore, infinitely indebted to our ancestors, whose sublime thought of a free state, an inspiration greater than their knowledge, has been the fruitful germ of our best inward and outward life. No other people have had so grand a national origin, for we were born in a disinterested war for rights and not for territory, and under the stimulus of an idea, which still transcends the highest practical achievements of our race. It has been the greatness, the predominance, the profound inherency of this original American idea which, forcing general conviction, has produced the uniformity of our later parties, and confined their divisions to transient or trivial and personal differences. But there is also another cause for that uniformity, in the fact that as societies advance in the career of civilization, their political divisions are less marked, but more subtle in principle, and less gross, but more indirect in the display of animosity and feeling. The progress of nations consists, or should consist in the simplification and reduction of the machinery of government, with which politics has chiefly to do, and the consequent extinction of politicians, who become more and more a pernicious class, with, at the same time, a continuous aggrandizement of society itself, of its industry, its arts, its local improvements and its freedom as well as order. Politicians for the most part are puny and contemptible specimens as statesmen. The most natural and the most permanent of our past political divisions arose out of the peculiar structure of the federal government, the nature and extent of its jurisdiction and its relations to the States. As soon as the constitution went into effect, the differences which had almost defeated its ratification before the people, were developed into strong and positive party hostilities. The Federalists and the Anti-Federalists took possession of the political field, and the noise of their conflicts sounded through many years, giving a sting not only to the debates of the Senate, but embittering the intercourse of domestic life and leaving deep scars of prejudice on the reputation of eminent men as well as in the minds of their descendents. The mere disputes as to the authority of the general government might not, perhaps, have led to such earnest and envenomed battles, at the outset, if they had not been complicated, especially under the leadership of Jefferson and Hamilton, with the profounder questions of individual rights just then agitating the Old World, with an intensity of feeling which amounted to frenzy. Hamilton, a man of talent, bred in camps, distrustful of the masses, an admirer of the British constitution and accustomed to rule, was disposed to rely upon the strong arm in government and may be regarded as the representative of the sentiment of law; while Jefferson, on the other hand, a man of genius, self-confident, generous, sanguine, tolerant of theories, an acolyte if not a teacher of the French school of manners and thought, leaned to the spontaneous action of the people, and was the representative of liberty.

Thus the party of State rights and the party of Liberty came to be identified, and took the name after a time of the democratic Republican party, while Federalism, or the doctrine of a strong central government, jumped in naturally with the doctrine of law and order. There was a double pressure of tendencies separating the two parties and intensifying their hatreds, and in the exacerbations of the times, inducing them to accuse each other respectively of tyranny and licentiousness. A Federalist in the opinion of the Republicans of those days, was only a monarchist in disguise, watching his opportunity to strangle the infant liberties of his country in the cradle, and to restore the emancipated colonies to their dependence upon Great Britain; while the Federalist retorted the generous imputation of his adversary, by calling him a Jacobin, a scoundrel and a demagogue, eager to uproot the foundations of order and let loose the lees and scum of French infidelity and French immorality upon society. We at this day, looking through the serener atmosphere of history, know that they were both mistaken in their extreme opinions and that they were both good patriots after all, necessary to each other, as it now appears, in tempering the dangerous excesses which might have followed the unchecked predominence of either, and in giving a more uniform and stable action to our untried political system. In all the subsequent changes of parties, the distinction of Federalist and Anti-Federalist has been maintained in theory at least and it is a distinction that will pass away only with the final establishment of the truth. During the war of 1812-15, the Federalists, as they were termed, were the most vigorous opponents of the use of power by the general government, and their most offensive acts, the proceedings of the Hartford convention, were nothing else than an attempt as it was deemed, to arrest and restrain the encroachments of the central authority upon the rights and interests of the separate States; whilst on the other hand the most enormous exercise of that authority—the acquisition of Louisiana by Jefferson—the suppression of South Carolina nullification by Jackson—the annexation of Texas by Tyler—have been resorted to by the leaders of the so-called Democratic or Anti-Federalist party. Indeed, so little consistency has been exhibited by parties in this respect, that we have all observed, that in general whatever party was in possession of the Federal Government has been disposed to push the use of its functions to the utmost practicable verge, while the party out of power has opposed this use, and assumed the virtue of continence. The primary idea of our institutions was, as we have seen, that of a free Democratic Republic. The liberty and equality of the people was the animating spirit of our revolution, and the inspiring genius of the constitutional structure to which it gave rise. But among the States which formed the elements of the Union there were some not strictly democratic and scarcely republican. They were aristocracies or oligarchies built upon a diversity of races. Their political and social privileges were confined to a class, while all the rest of their inhabitants were slaves. The consequence was a growing divergency between the convictions, the interests and the tendencies of one half the Union which was eminently free and democratic and those of the other half which was slave-holding and aristocratic. By the year 1854, the question of slavery had become the controlling question in the Republic's politics. There was now the Pro-slavery party, which was the propagandist of slavery; the Democrats, who masqueraded in the faded wardrobe of democracy, but who cared more for office than principle, and the real Democrats who still retained the inspirations of the Jefferson school; the Whigs, who were the legitimate depositories of federal principles crossed and improved by modern liberalism; the Fire-eaters, who seemed to be opposed to the union of the northern and southern States under any circumstances; and lastly—the abolitionists, who were a moral rather than a political combination, though a large branch of them were not, in 1854, opposed to decided political action. The abolitionists and the fire-eaters, representing the extremes of Northern and Southern feeling, had no little influence on public opinion. In eloquence, earnestness and integrity of purpose they were superior to the other parties, the abolitionists in particular absorbing some of the finest ability of the country, oratorical and literary, but they were both too extravagant in opinion and too violent in procedure to conciliate a large and effective alliance. Their denunciations of the Union, proceeding from contrary views of its effects, the one condemning it because it was supposed to sanction and the other because it was supposed to interfere with slavery, neutralized each other, and led more tranquil minds to a conviction that they were both alike wrong. The constitution did not recognize the existence of slavery as such, at all, and in no form except indirectly, nor did it, on the other hand, confer upon the government any authority for meddling with it, treating the subject wisely, as was thought, as a matter of exclusive State jurisdiction; yet the spirit and letter of the federal constitution were alike instinct with freedom, and rightly interpreted, set up an insuperable obstacle against the extension of any form of servitude. The malice of its enemies found its food, not in legitimate operations of the organic law, as the framers of it intended to operate, but in those deviations which the craft of politicians had superinduced upon its action, in those workings and torturings of its structure, by which it was made to cure selfish and flagitious local designs. It would have been well if some of the anathemas pronounced upon the factions at that time of an extreme type, upon the disunionists of either wing, had been levelled at these more formidable antagonists of the peace, the politicians, to whose unjust and reckless schemes we owe nearly all our violent national reactions. In 1854, the Whigs as a party were pretty much defunct. It had never succeeded in becoming for more than a year or two at a time, a predominant party. Respecting the Southerners there were some who were the propagandists of slavery, and some who simply wished their peculiar domestic system to be let alone. The latter class deemed slavery a burden at best and a sad inheritance and were anxious to manage it wisely with a view to its ultimate extinction and would have been glad to have been relieved of their painful weight of responsibility. The leaders of the Pro-slavery party identified themselves with the popular party of the North, and then, having accomplished that, gradually directed that party to the defence and spread of their peculiar doctrines. An eminent leader of the South, Mr. John C. Calhoun, while acting as secretary of State, engaged in an official defence of the system of slavery before the tribunal of the world and disgraced the nation by representing the Federal Republic as the apologist and defender of the most mean and offensive species of despotism. The demand for the introduction of slavery into the new territories of the West, the demand that the free States should be made a hunting ground for slaves, in rapid sequence, secession—the War of the Rebellion and the final emancipation of the slaves by Lincoln, rescued this great, this beautiful, this glorious land from a hateful domination and made all Americans, freemen! We come now to the present. We have to-day no profound, radical comprehensive questions to quarrel about either in the Republican or in the Democratic party. We want as a Republic a political party at the national helm, who will show us a steady continuance in integrity, a deaf ear turned to the charming of the adders of office, who will exhibit an eagerness to consult, amid all the shiftings of policy, the fresh impulses of the honest young heart of the nation and such a party will, ere long, gather about them the intellect, the virtue and the popular instincts of right, which are the redeeming elements of States. The best Republicans and Democrats are scattered through the respective parties at large and elsewhere, as leaven through meal, without having an effective control in them, or even, perhaps, connection. These are the men who represent the popular instincts, who cling to living ideas of justice and equal rights and progress, and who refuse to follow their fellows in a *pell-mell* abandonment of themselves to the seduction of machine politicians of either party. They are not a few in number either North or South, and comprise a majority of the young men of the nation, yet uncorrupted by official contact; but possessing no separate organization anywhere, they are sadly overborne by the practiced managers of the old organizations, who wield the machinery of party action and consequently of power. The other class comprise the official or machine politicians, so denominated because they move and talk as they are wound up, constituting a powerful body in the State. Office is conferred, not as the meed of patriotic deserts, but as the wages of supple and mercenary service. They who dispense patronage, do so in the conviction of Walpole that every man has his price, and they who receive it, take it with a full knowledge that the stamp of venality is on every token of silver. Superiors in place are not superiors in merit, only superiors in craft and recklessness, *while inferiors don the gilt lace and plush* of their official varletism without a blush on their cheeks, or a sense of shame at their hearts. Government, in short, is converted into a vast conspiracy of placemen, managed by the adroiter politicians of the set, controlling elections, dictating legislation, defeating reforms, and infusing gradually its own menial and much-worn spirit into the very body of the community. The masses even, under the paralysis of such a domination seem to be rendered insensible to the usual influences of honor and virtuous principle; are deadened almost to the heroic examples of their fathers; lose the inspiriting traditions of an earlier greatness and grandeur of conduct; and virtually, if *not actually, sink into slaves. We claim that ours is* a representative government, yet under the present system of machine politics, a number of men, delegated for particular purposes to Washington, possessing not a particle of authority beyond that conferred upon them by the people, neglect the objects for which they were chosen, and proceed to accomplish other objects which are not only not wished by their constituents but are an outrage upon their sincerest and deepest convictions. Can *we call them representatives?* What we want in legislation, as in other trusts, are honest fiduciaries; men who will perform their duties according to our wishes, and not in *pursuance of their* own selfish objects; men who do not require to be watched at every step and whose fidelity does not depend alone upon our ulterior privilege of breaking them when they have done wrong. Any man in Congress who knowingly betrays the will of his constituents should be branded as utterly unworthy of confidence and support. He has done his share towards the conversion of our fair fabric of free government into a machine of office-holding despotism, and the only recourse *that is left us*, to mark his treachery, is to discharge him from every participation in its councils. With regard to our future, the beautiful region of the West, compared with which the largest *principalities* of Europe are but pin-folds, nay, compared with which the most powerful existing empires are of trivial extent, may well cause the heart of the American and of the foreigner even, who rides over them to dilate as he beholds in their rich fields, the future homes of an advancing and splendid civilization. We can hear, where but a few years ago was but the rustle of the grasses, the hum of a prosperous industry. We have seen magnificent cities rising on the borders of the streams, and pleasant villages dotting the hills, and a flourishing commerce whitens the ripples of the lakes; the laugh of happy children comes up to us from the corn fields, and as the glow of the evening sun tinges the distant plains, a radiant and kindling vision floats upon its beams, of myriads of men, escaped from the tyrannies of the Old World, and gathered there in worshiping circles to pour out their grateful hearts to God for a redeemed and teeming earth.

This great West, if appropriated to the people, will prevent the concentration of wealth, and stimulate the pride and industrial energies of our American citizens. We shall have no patricians to usurp the public domain, nor a people to grow poorer and corrupter, *till at last* they are fed like paupers from the public granaries. No despots like Sylla and Marius of Rome. to convulse society by civil wars, and no tyrant Cæsar to arise and reap the harvest of previous distractions, and as the only salvation from pro*founder miseries, to erect on the ruins of the Republic* an irresponsible monarchy. It is one of the dangers as well as glories of this Nation, that its plans are executed with the rapidity of magnetism. A thought is scarcely a thought before it becomes a deed. We scorn delays. We strike and parley afterwards; we actualize the dreams of the old philosophers, and impart to our abstract ideas an instant creative energy. Let us therefore now, as Americans, as freemen, as Christians, lay aside all party divisions and animosities in order to rescue our Republic from a hateful domination of machine politics. Let independent Democrats and independent Republicans meet for work on an independent, new platform, to work for the highest good of a Union formed for the establishment of liberty and justice—for a Union born of the agonies and cemented by the blood of our fathers—for a Union whose mission it was to set an example of republican freedom and commend it to the panting nations of the world. *We are not yet arrived at such* shameless debasement that we, freemen of the Republic, shall be suffocated by politicians into a silent acquiescence with corruption and machine politics, whether emanating from one party or the other. We propose, as the young men of this Nation, to dare to utter the words and breathe the aspirations of our fathers, and we propose to propagate their principles, and the time is ripe for a movement of the best progressive blood of the Republic, which shall reach from Maine to California, and who need dread neither ostracism nor political death; a movement which shall know *no North* and *no South*, but simply *our country*. Under the benign influences of such a movement the great interests of finance and commerce will awake and spring forth with newness of life and national happiness, prosperity and renown, strengthen and grow. By "our homage for our Pilgrim Fathers; by our sympathy in their sufferings; our gratitude for their labors; our admiration of their virtues, and our attachment to those *principles* of civil and religious liberty which they encountered the dangers of the ocean, the storms of heaven, the violence of savages, disease, exile and famine to enjoy and establish," let us rise up, crush machine politics and transmit the great inheritance unimpaired.

We hope we are alike free from a constitutional conservatism and a constitutional tendency to change. We neither belong to the class which clings to the old in all things, nor that other class which is so in love with progress as often to mistake novelty for improvement. We think, however, that a disappearance of the two present political parties will take place, not abruptly, but by gradual modification into something else; a new movement that all professional men will join. It will be a process of evolution. The promotors of such a movement will see to it that their legislators and public rulers become such by virtue of their statesmanship and power to rule; by their force of nature, their intellect and their higher worth; the best cultured and the most refined. The promotors of such a movement will see to it that it conforms itself to equity and reason. Nothing will be saved by its prestige. The required change is urgent, but the vehemence of its promotors must not be intemperate. The promotors of *such a move-*

ment will nominate men for office with whom no question shall be too subtle as to elude their grasp, or so complex as to defy their penetration. The spirit of bigotry has no place in our mind. We are tolerant of the opinions of others, and claim to be generous in our judgments toward them, but it is an immutable law of Providence that decay follows growth, and at present we have no cause to be proud of the degradation and corruption of American politics. There are men as bright in intellect, as pure in patriotism, if not as powerful in influence, as those whose grave has closed upon their labors leaving their memory and their career at once an incentive and an example for their countrymen, who would gladly *join a progressive movement, and such a movement* will yet put forth men who will stand prominently forward upon the canvas of history, impressing their characteristics upon this century. Such a movement, among other things, will address itself to the duty of calling a certain class of the people back from revolutionary theories to the formation of habits of peace, order and submission to authority, and of absolute reliance on constitutional remedies for the correction of all errors and the redress of all injustice. Such a movement will be at the same time eminently conservative of peace, and of the great principles of constitutional liberty on which the republican institutions of our country are founded. The promotors of such a movement will see to it that men of clear intellect, intuitive sagacity and fate-like will shall represent them, and what *wrong* is there which such a movement of the American people cannot *successfully crush, and what right is there which* can withstand their united power? Such a movement, which will be a declaration of the supremacy of the American people, will make this Republic great, prosperous and happy, and will labor to keep the Constitution and the Union in vigorous existence, under whose genial influences all that glory and happiness and prosperity we know, has been achieved. Such a movement will have a freedom of thought, a dignity and an intellectual health which fail to obtain when machine politics are in the ascendancy.

MUNICIPAL REFORMS FOR CITIES.

All cities in the various States of similar grades should have charters that are alike; they should have the same methods of bookkeeping; they should pursue the same course in the assessment and valuation of property for the purpose of taxation; and they should pursue the same policy with reference to the ownership of plants for furnishing their people with light, with water, with pavement and with sewers. The charter of these cities will direct as to how the city accounts are to be kept. There should be a State Commissioner of Finance in every State, and every city should be under obligation to report yearly its financial condition to the central State authority. It would then be easy, at the capital of any State, to ascertain the exact receipts and expenditures of any city in the Union. The methods of cities need to be unified and simplified as to their administration and their accounts. This is one of the administrative and economic problems that confront the promotors of a new movement.

Many municipal governments are very expensive, very inefficient and very scandalous. This cannot be otherwise while they are controlled by organizations formed merely for the distribution of spoil. Such a condition of things can only be remedied by good citizens uniting in vigorous and persevering efforts to put down the organized spoilsmen and divorce city government from party politics. The qualities which the head of every municipal government should possess are, a thorough knowledge of municipal affairs, and of the men who have been or who seek to be active in them; that knowledge acquired not only by study, but by a long and large practical experience; a head full of the strongest common sense; a calm and clear judgment; a courage to down rascals; a sturdy uprightness of character and an absolute integrity of purpose; and a no man's man, a man who will feel and conduct himself as the servant not of a party or of a clique, but of the whole people of the city and their true interests, and a man whose word is as good as his bond.

THE NEED OF A FIRST RATE COAST DEFENCE AND A FIRST RATE NAVY FOR THE REPUBLIC.

We need to protect the seaboards of the Republic by a first rate system of coast defence, and we also need a first rate navy. Our great Pacific seaboard and the Atlantic coast are alike helpless. The maintenance of peace will be better assured by a due preparation for war than by any other means. Mr. Erichson's system of coast defence vessels is very efficient and should be adopted. This Republic should be made a great sea power, but this cannot be accomplished without a strong navy, and no country can maintain a strong navy without an extensive merchant marine. With a strong navy there will be the absolute necessity of coal and supply depots in *many parts of the world. Without these, extended* operations must fail. No great sea power can now exist without abundant, well placed and easily defended depots. Among the questions which are of first importance in naval war are, as Captain A. T. Mahan, of the U. S. Navy, says, "the proper formation of the navy in the war, its true objective, the point or points upon which it should be concentrated, the establishment of depots of coal and supplies, the maintenance of communication between these depots and the home base, the military value of commerce-destroying as a decisive or secondary operation of war, the system upon which commerce-destroying can be most efficiently conducted, whether by scattered cruises or by holding in force some vital centre through which commercial shipping must pass." We should revive our navy and infuse new life into it and become a great sea power.

LABOR REFORM.

One of the most important reforms that a new movement will have to deal with, is Labor Reform, and I submit several distinct propositions which can readily be used for legislation.

1. *Legislation against child labor.*—The State must educate all its children so as to ensure them growing up with vigor of mind and body, which they cannot do if put to work in mills, etc., at an early age. This is a matter of national importance, as the source of our permanent national prosperity is to be found only in *all* of our American children growing up with strong physical, moral and intellectual health, and this is impossible if they are removed from home to the dangerous moral atmosphere of shops, factories and mills. The State must protect its children from this physical and moral evil.

As Richard Michaelis says, all men should understand that the great reason why communism is not the proper form of society and why everybody should not have an equal share of the products of labor is, that men are not alike. They differ in mental power and physical ability, and as the result if the labor of men is different, there is no reason why the wealth of the nation should be equally divided. We have in our Republic to-day the best organization of society ever known in the history of mankind. Labor agitators should understand this perfectly. If the workingmen of the nineteenth century, instead of sacrificing enormous sums in strikes, would organize one trade after another into coöperative associations, they would solve what they style the social questions with comparatively little trouble.

2. *Legislation to restrict properly the labor of women in industrial establishments.*—We must preserve, at all hazards, our American homes, that the mother may not leave the children to grow up demoralized without a mother's care.

3. *Legislation looking toward the improvement of the sanitary condition of the dwellings of the urban laboring classes.*—Houses unfit for habitation should be torn down and small parks provided to give breathing places for the crowded sections.

4. *Legislation against Sunday work.*—All factories, workshops and stores should be closed every Sunday and no employees compelled to work for seven days in the week. The working classes have suffered this slavery long enough. No railroads should be allowed to run coal trains in Sunday. There is no true American so apathetic, so avaricious or so selfish as to be willing to blight the prospects of his fellow man by condemning him any longer to this servitude. An American District Telegraph boy has just come into my office. He tells me he works seven days in the week, getting $3.60 per week, and every other Sunday off. Why does this rich company treat boys so?

5. *Legislation against night work for women and children in manufacturing establishments.*

6. *Legislation in favor of the length of the labor day being kept within the bounds prescribed by physiology and hygiene,* that the head of the workingman's family may be enabled to perform his duties as the father of a family and as a citizen.

7. *Legislation, that by the governmental dissemination of appropriate lectures and literature among the working classes, ignorance shall be so replaced by enlightenment, as to diminish the excessive mortality of working people, and especially of children.*

8. *Restriction of excessive immigration of foreigners,* especially of the lower classes, who injure American workingmen, and laws to keep out contract labor and all the most degraded foreign element. No law of Congress should be framed against nationalities as such.

9. *Legislation tending to restrict corporations and trusts formed for the purpose of antagonizing labor and vice versa.*—If there are vast combinations of capital, there will be vast combinations of labor and if there is a collision between these two interests, the State suffers and its public welfare.

> "A happy bit hame this auld world would be
> If men, when they're here, could make shift to agree,
> An' ilk said to his neighbor, in cottage an' ha'
> 'Come, gie me your hand, we are brethren a'.'"

10. *Legislation in favor of the better protection of life and limb of the working classes.*—The employer's liability acts need to be more and better, and there should be no tendency of our courts to decide against workingmen in suits for damages.

There should be stringent factory laws, including protection against dangerous machinery, sufficient fire escapes and satisfactory sanitary arrangements. A new movement will see that there is a higher development of laws protecting the person, shielding it and guarding it in all its capacities.

11. *Legislation to improve our educational facilities.*—By manual training and industrial schools. Girls should be taught by the State sewing, cooking, and the care of the house. We should so legislate that there shall be no such thing as an illiterate or uneducated class of Americans. That there shall be no neglected and uncared for children. Education in some form should be carried on by the State to the age of 16 or 17. This will give to our American children an immense advantage in the competition of life, and train to habits of industry and mental application. We can thus extinguish the pauper and semi-pauper class, so that there will be no more to disgrace America. There is such a thing as to so exaggerate the doctrines of freedom as to glory seemingly in our abuses. *Education must be compulsory.* The church and the school house are the crowning of this Republic.

12. A better administration of the law, fair but just. Less police brutality and more responsibility.

13. Legislation tending towards a recognition of all that is good and repression of all that is bad in labor organizations.

14. *Legislation tending toward public property defense.*—To guard public domain and public parks and to secure for the public the full value of public rights. The property of the public must be paid for and protected like the property of individuals.

15. Legislation to encourage thrift, to prosper the masses by more savings banks of undoubted security. Banks must be rendered secure by bonds to the nation, and where practicable, State and municipal banks started. The debts of all larger cities in the United States, held in small sums by the masses to ensure better political effects. Every citizen should have a direct interest in municipal affairs and in the purity of local, as well as of national politics. If the national government ever have to borrow money, have national postal savings banks everywhere.

16. Legislation tending so to regulate monopolies and corporations that the people may be assured of lawful methods, corporate honesty, no interference by them of legislative enactments, no popular rights defied, and no public property stolen. Legislation that shall secure individual responsibility of manager with civil and criminal remedies, and measures adopted that will make it possible to place responsibility for corporate acts upon some one individual.

17. Legislation tending toward the public management of natural monopolies, like gas works, water works, electric lighting works, telegraph companies and railroads.

Every town in the United States is better off if it owns the water and gas works. Public bodies should help themselves, not depend on others. These are public functions. No party has ever yet succeeded in protecting individual rights. Not a city in the Union under their policy, is today strong enough to force street car lines to lay properly grooved rails. Corporations do not bear their due share of public burdens. We want municipal, State and national self help. The beginning should be made in local governments and from these extend to State and nation.

18. Legislation tending to provide public play grounds for the children in every city, to keep them out of mischief which degenerates into bad habits, intemperance and crime, and also to provide for more public libraries, museums and art galleries and free concerts so that the people may have full opportunity to enjoy all the advantages of literature, music and art, and the elevating and refining influences of their agencies.

19. Legislation such as necessary, tending to a reform of taxation.

20. Legislation tending toward a further development of labor bureaus, managed by trained experts.

21. Legislation tending toward a prudent encouragement of coöperation. It will promote thrift and temperance, when laborers like the Minneapolis coopers themselves become capitalists and self employers by placing in a common fund their savings and managing their own business.

Respecting the *Purification of the Ballot Box* the great demand, we think, is for an educational qualification for voters and a ten to twenty-one years residence, at least, in the United States. *No man should vote who cannot read and write, or who cannot read and understand the constitution of the United States.*

Governments, in a certain way, have always done something to aid men in their endeavors to stay the pestilence and save the afflicted; but never adequately. They have generally refused to make the medical profession a permanent integral part in the administration of the State; that is in the making and the execution of sanitary laws.

What laws are necessary for the full employment of our beneficent profession? We reply: those that relate to the social state of the people for the prevention of disease. They comprehend an amplitude and purity of water supply, proper dwellings for the lower classes without overcrowding or deficiency of light and air, unadulterated food, complete drainage and disinfection of excrement, the preservation of rivers and smaller streams of water from pollution, the regulation of the hours of labor, the protection of childhood from the imposition of toil, and their proper education, cleanliness of streets and planting of shade trees for protection from intense solar heat, and the decomposing power, by their leaves, of deleterious gases and miasms; the establishment of public baths, the operations of quarantine to prevent invasion of pestilence and landing of immigrants with diseases dangerous to others, the isolation of persons attacked with infectious disease and the disinfection of localities, the construction and management of general and special hospitals, the care of the sick poor in their homes, the prevention of consanguineous marriages and of those who have destructive types of constitution, the warning of society of the evil consequences of abuses of the brain, the material basis of consciousness, whereby a free will is impaired and the sufferers become irresponsible and are often mentally ruined; and lastly, the regulation of those two great giant evils of civilization, intemperance and prostitution.

We affirm that all the measures for public relief on these important subjects should be under the guidance of medical men.

It is not the mere knowledge of the human frame as a diseased thing, or a mechanism, that should give us highest consideration in the State, but rather our capacity to prevent sickness by securing the proper administration of the laws of health. At present we occupy positions but little better than mere advisers to authoritative bodies; our soundest suggestions are at the mercy of ignorance and prejudice of uninformed legislation. The medical profession holds itself ready not only to diminish the fearful destruction of life now going on, but ultimately to destroy the contagia that cause it.

The alcohol question must be met by educating the public as to the physiological action of alcohol on the individual and his offspring, and it would be a measure of great advantage to have a law making it a felony to sell adulterated or impure liquors, and to have every State enforce this law rigidly. This would be a very practical wedge to insert and drive home, and having done this, we could then so legislate as to restrict the sale of alcohol as is the case with other poisons. The immense profits in the liquor trade are largely due to the manufacture and sale of adulterated and impure liquors, and by restricting by Governmental legislation such sale, you diminish the immense profits of those who sell liquor to your boy or my boy and cause his physical, moral and intellectual death. Alcohol is not a food. It is a poison, and when the whole community are thoroughly educated up to this fact, and a sufficient public sentiment created, the temperance problem will be solved, except for the inebriate whose disease of inebriety has destroyed his will power and resulted in an irresistible craving for alcohol which he is powerless to control, owing to his disease.

Respecting tariff revision, we need such a degree of protection as will best serve the interest of the American people as a whole. The South needs protection for their rice, their sugar, their oil and their wool, and the experience of the other nations of the world teaches us that very careful thought and wisdom must be used. We must make great material prosperity conduce to individual advancement by teaching the American people to recognize God's ownership in all our substance. Wealth, instead of being centralized, will be distributed, when Christian stewardship is accepted. The number of missionaries in our cities must be increased twenty-fold, and mission chapels built among the densest population of all the cities. It is for all true Americans to see to it that the dangerous and destructive elements do not make greater progress than the conservative. To-day the reverse is true, and the future of our American Republic depends upon the way in which American Christian men meet the crisis. America Christianized means the world Christianized, and any new movement must, to be successful, become God's right arm in His battle with the world's ignorance and sin. We must work to Christianize every citizen of our Republic, which means all the races. Such a movement has glorious possibilities before it. Shall we realize them? We must see to it that there is placed in the hand of every Christian agency in the great West every power that money can wield. The whole civilization of the West must have Christian education. Men of wealth should take pleasure in liberally endowing the young Western colleges, which are characterized by a strong religious influence. There are boundless possibilities for usefulness in wealth, and Christian men will make them realities.

Any new movement will be an American movement for the world's sake. It must use the Gospel to transform the lawless men and women of our great cities into good citizens, for nothing else can do it. The watchword of any new movement must be, *Religion, Learning, Liberty and Law. In hoc signo vinces*, Christianize the immigrant and he will be easily Americanized. Christianity is the solvent of all race antipathies. Christianity will antagonize modern socialism far more rapidly than political economists, and reconcile social classes. The remedy is Christianity as taught in the New Testament. We say to every American citizen, if you are a true patriot and love your country, work together to evangelize the poorer classes in all the large cities. We say to great manufacturers, be just, and admit the workingman to a just share in the profits of his labor. This will result in the twofold improvement of material prosperity by the great improvement of your people in your factories, and in seeing your dividends increase and the wages of your operatives increase with your dividends. Popular discontents would then decrease wonderfully. True Americans will legislate patriotically and wisely, and we have no use for professional politicians and every use for Christian statesmen. Every true American citizen wishes for National prosperity. Every one who believes in the Christian religion knows that by rendering man temperate, industrious and moral, it makes him prosperous. If each of these professed Christians who would like to see Christian statesmen in office would give ten cents a week, it would amount in a year to at least $52,000,000 for a fund to do good with. If we are to have an American movement let every American man, woman and child take an interest in it, as its object is to benefit us and our country. We have the power to mould the destinies of unborn millions if we will but exercise it. Let us not devitalize ourselves as Americans by alcohol, but eagerly grasp the grand possibilities of spreading Christ's Kingdom on earth in this epoch of civilization in which traditionary creeds are losing their hold. As men of science we have good reason to believe that the laws of the spiritual world are simply the laws of the natural world, and that to-day it is possible to enunciate spiritual law in the exact terms of biology and physics We have to-day an entire recasting of truth, and all that is needful in order to offer to mankind a scientific theology is the introduction of law among the phenomena of the spiritual world. Law introduced among the scattered phenomena of nature has transformed knowledge into eternal truth and has made science, and to thinking men the reign of law will transform the whole spiritual world as it has already transformed the natural world. We have to study truth in nature as it came from God. Bagehot has given us the extension of natural law to the political world; Spencer has given us the application of natural law to the social world; and last and greatest of all, Henry Drummond has given us the extension and application of natural law to the spiritual world, and his work has, I trust, been read by every man and every woman. At the top of natural law we touch God, and there we find the same fixed laws that so impress us in nature. It should be the crowning glory of such an academy as ours, to seek to civilize and evangelize all races who come to America so far as we are able. The foreign policy of any new movement will not be one of arms, but of vitality, civilization and evangelization. We welcome in our country men of every race and clime, and once here he is free to become whatever he can make of himself. The race question can be solved in a measure by first educating and Christianizing the colored man, and then sending him to darkest Africa, which such explorers and heroes as Stanley have opened up, for the purpose of civilizing and Christianizing his African brethren. An American movement, if represented by Christian statesmen, and adhering to the central pivot of religion, learning, liberty and law, can radiate out in every direction, and what wrong is there which it cannot right, and what evil that it cannot suppress? America is yet to rule the world, and an American movement should naturally be the movement at the National helm. We have nearly seventy millions of people here, and we have room for a thousand millions. We are to have the great preponderance of numbers and of wealth. Arts, sciences and empire are fast traveling in our direction. Do our wealthy men realize their Christian stewardship? Will they use their vast wealth for the good of the Republic? We are going to have not only the greatest numbers, but also the highest civilization, if wealth is rightly used, that the world has ever seen. The great principle of a new movement must be to lift up all who come to our shores into the light of the highest Christian civilization, so that as American citizens their watchword will be identical with ours.

Let the great idea be the love of liberty and the love of God, and nothing can withstand our power. Our Pilgrim Fathers came here with that idea, and may it always be perpetuated. It is impossible to overestimate the influence upon the entire world of any nation which becomes distinguished for its marked religious character and its educational advantages. The whole civilized world will acknowledge its empire, and such a career has this young Republic of America. May the time come when the entire population of our beloved country may be found in church every Sunday, and we will see to it that nothing is allowed to extinguish the moral illumination of this day, and break this glorious mainspring of the moral government of God. Growing intelligence will never compensate for decaying morals, and intelligence must keep pace with the growth of population—and with an educational qualification for voters and compulsory education for children, such a thing as illiterate voters, or an illiterate school population, will be unknown. We must look well that moral and religious influences are peculiarly strong where our social explosives are gathered, *i. e.*, in the large American cities. This is the way to antagonize the dangerous elements of our civilization. This is the great conservative principle by which society can be kept together.

Finally, I desire to speak briefly of one of the most important problems with which society in our Republic has to do today, viz: *The Family, the Church and the State*, and their relations to the great social fabric. Let us first look at the Family. We have under this head the questions of sex, education and marriage. Leaving the questions of sex and marriage to be dealt with at some future time we come to the subject of education. We wish our children to be well educated in literature, art and music and above all in religion. How shall we accomplish it? "It is noticeable (says Coleridge) how limited an acquaintance with the masterpieces of Art will suffice to form a correct and even a sensitive taste, where none but master pieces have been seen and admired; while on the other hand the most correct notions and the widest acquaintance with the works of excellence of all ages will not perfectly secure us against the contagious familiarity with the far more numerous offspring of tastelessness or of a perverted taste." This holds true equally in literature, music and in morals. Bring the children up on masterpieces, if you would have them acquire the strong bone, and blood and muscle of a correct taste and a lofty moral character. Do not vitiate their taste or their morals by bringing them into contact with vile art, vile literature or poor music, when it is just as easy to surround them with all that is highest and purest and most elevating. If every patriotic parent and teacher would, as Hamerton has said, so store his mind and the minds of his children and pupils with knowledge and make their judgments sure, in order that the national mind, of which their mind is a minute fraction, may be enlightened by so much, be it ever so little, think what the result would be; Hamerton truly says that the intellectual life of a nation is the sum of the lives of all intellectual people belonging to it, and in this sense, your culture is a gain to your country whether she counts you among her eminent sons or leaves you forever obscure. "Act well your part; there all the honor lies." John Foster, one of the most profound thinkers, says "lay hold on the myriads of juvenile spirits before they have time to grow up, through ignorance, into a reckless hostility to social order, train them to sense and good morals; inculcate the principles of religion, simply and solemnly, *as* religion, as a thing of divine dictation and not as if its authority were chiefly in virtue of human institutions; let the higher orders, generally, make it evident to the multitude that they are desirous to raise them in value and promote their happiness; and then, *whatever* the demands of the people as a body, thus improving in understanding and sense of justice, shall come to be and *whatever* modification their preponderance may ultimately enforce on the great social arrangements, it will be infallibly certain that there never *can* be a love of disorder and insolent anarchy, a prevailing spirit of revenge and desolation. Such a conduct of the ascendant ranks would, in this nation at least, secure that, as long as the world lasts there never would be any formidable commotion, or sudden, violent changes. All those modifications of the national economy to which an improving people would aspire and would deserve to obtain, would be gradually accomplished, in a manner by which no party will be wronged and all will be happier." One reason of the greatness of our country is that ever since the landing of the Pilgrims at Plymouth, religious principles have been impressed on the opening minds of the American youth, and it has been under the ascendancy of this divine wisdom that our children's discipline in any other knowledge has been conducted, and nothing in the mode of education has had a tendency contrary to it and everything has been taught in a manner recognizing the relation with it, as far as has been consistent with a natural unforced way of keeping the relation in view. With the American youth the sense of *propriety* is *conscience*; the consideration of how they ought to be regulated in conduct as a part of the community is the recollection that a Divine person dictates the laws of that conduct and will judicially hold them amenable for every part of it.

We come, now, to *The Church.* To make a strong Republic, the church must become the most powerful factor in the social and political life of the land, for as Foster says, "is not a discipline thus addressed to the purpose of fixing religious principles in ascendancy, as far as that difficult object is within the power of discipline, and of infusing a wholesome tincture of them into whatever else is taught, the right way to bring up citizens faithful to all that deserves fidelity in the social compact?"

There is coming, and it is not far off, we see it in the Republic of France, in the newly formed Republic of Brazil, we hear it dimly muttering from the mines of Siberia, a great change in the social systems of the Old World. Webster says, "What is that conservative principle by which society can be kept together, then, when Empires and Kingdoms shall have no more influence? The only conservative principle must be and is, Religion! The authority of God! And the influence of the teaching of the Church". Coleridge says, "yet those who confine the efficiency of an established church to its public offices, can hardly be placed in a much higher rank of intellect, than 'minds of the most vulgar cast' who undervalue the Christian mainstay. That to every parish throughout the kingdom there is transplanted a germ of civilization; that in the remotest villages there is a nucleus, round which the capabilities of the place may crystallize and brighten; a model sufficiently superior to excite, yet sufficiently new to encourage and facilitate imitation; this is the unobtrusive continuous agency of a Protestant church establishment, this it is which the patriot and the philanthropist, who would fain unite the love of peace with the faith in the progressive melioration of mankind, cannot estimate at too high a price". One of the greatest works of the church is to teach the children to keep themselves pure and unspotted from the world and to do this by inculcating the love of their Father, for them, and by exciting their love and reverence for the church as his temple in which to do him honor. That great statesman, Daniel Webster, has said of the Christian ministry of the United States: "And this body of clergymen has shown to the honor of their own country and to the astonishment of the hierarchies of the Old World that it is practicable in free governments to raise and sustain by voluntary contributions alone, a body of clergymen, which, for devotedness to their calling, for purity of life and character, for learning, intelligence, piety and that wisdom which cometh from above, is inferior to none and superior to most others".

We have finally to consider *The State.*

What constitutes a State?
  Not high-raised battlement or labored mound
Thick wall or moated gate:
  Not cities proud, with spires and turrets crowned;
Not bays and broad-armed ports,
  Where, laughing at the storm, rich navies ride;
Not starred and spangled courts,
  Where low-browed baseness wafts perfume and pride.

No: *Men*, high minded *men*,
  With powers as far above dull brutes endowed,
In forest, brake, or den,
  As beasts excel cold rocks and brambles rude;
Men who their duties know,
  But know their rights, and knowing, dare maintain:
Prevent the long-aimed blow,
  And crush the tyrant while they rend the chain:
These constitute a State;
  And *Sovereign Law*, that State's collected will,

O'er thrones and globes elate
Sits empress, conniving good, repressing ill.

At the meeting of the first Congress of the United States, Daniel Webster tells us that there was a spirit of Christianity which rose above forms, above ceremonies, independent of sect or creed and the controversies of clashing doctrines, and John Adams in a letter to his wife, Mr. Webster says, states that he never saw a more touching spectacle. "Mr. Duché read the Episcopal service of the Church of England and then, as if moved by the occasion, he broke out into extemporaneous prayer, and those men who were then about to resort to force to obtain their rights were moved to tears, etc." Let the State as well as the church, teach the children to keep Sunday as a holy day. By arresting the stream of worldly thoughts, interests and affections, stopping the din of business, unloading the mind of its cares and responsibilities and the body of its burdens, while God speaks to men and they attend and hear and fear and learn to do His will, man gains in physical, moral and intellectual health. Is there one so shortsighted, whether Churchman or not, who would willingly extinguish the moral illumination of Sunday, and break this glorious mainspring of the moral government of God? Let no statesman ever forget what the family and the State owe to the church and to the ministers of Christianity, and neither let them forget that the only great conservative principle by which society can be kept together is religion, and let State and church work together for the highest interests of our American Republic. Let us send as far as possible Christian statesmen to Congress, to our State Legislatures and Senates and we—the people—will ourselves solve the most difficult problem of modern society. It is the duty of the State to inculcate patriotism in the teaching of scholars in the public schools and in the homes of the people. Teach the children's hearts to respond with every throb to these words of Daniel Webster, "Hail! all hail! I see before and around me a mass of faces glowing with cheerfulness and patriotic pride. I see thousands of eyes turned towards other eyes all sparkling with gratification and delight. This is the New World! This is America! This is Washington! and this is the capitol of the United States! and where else, among the nations, can the seat of government be surrounded, on any day of the year, by those who have more reasons to rejoice in the blessings which they possess? Nowhere, fellow citizens! assuredly nowhere! Let us then meet this rising sun with joy and thanksgiving. . . . . The muse inspiring our fathers was the Genius of Liberty, all on fire with a sense of oppression, and a resolution to throw it off: the whole world was the stage, and higher characters than princes trod it: and instead of monarchs, countries and nations and the age beheld the swelling scene. How well the characters were cast, and how well each acted his part, and what emotions the whole performance excited, let history, now and hereafter, tell. . . . . Fellow citizens, this inheritance which we enjoy to-day is not only an inheritance of liberty, but of our peculiar American liberty. Liberty has existed in other times, in other countries and in other forms. There has been a Grecian liberty, bold and powerful, full of spirit, eloquence and fire; a liberty which produced multitudes of great men, and has transmitted one immortal name, the name of Demosthenes, to posterity. But still it was a liberty of disconnected States, sometimes united, indeed, by temporary leagues and confederacies, but often involved in wars between themselves. The sword of Sparta turned its sharpest edge against Athens, enslaved her and devastated Greece; and in her turn, Sparta was compelled to bend before the power of Thebes. And let it ever be remembered, especially let the truth sink deep into all American minds, that it was the *want of union* among her several States which finally gave the mastery of all Greece, to Philip of Macedon.

"And there has also been a Roman liberty, a proud, ambitious, domineering spirit, possessing free and popular principles in Rome itself, but even in the best days of the republic, ready to carry slavery and chains into the provinces and through every country over which her eagles could be borne. What was the liberty of Spain, or Gaul, or Germany, or Britain, in the days of Rome? Did true constitutional liberty then exist? As the Roman empire declined, her provinces, not instructed in the principles of free popular government, one after another declined also, and when Rome herself fell, in the end, all fell together. Our inheritance is an inheritance of American liberty. That liberty is characteristic, peculiar and altogether our own. Nothing like it existed in former times or was known in the most enlightened States of antiquity.

"The State must guard and perpetuate our distinctive American political principles which are: 1. The establishment of popular governments on the basis of representation. 2. That the will of the majority, fairly expressed though the means of representation, shall have the force of law, and 3. That the law is the supreme rule for the government of all. . . . . And I now proceed to add that the strong and deep settled conviction of all intelligent persons amongst us is, that in order to support a useful and wise government upon these popular principles, the general education of the people and the diffusion of pure morality and true religion are indispensable. Individual virtue is a part of public virtue. It is difficult to conceive how there can remain morality in the government when it shall cease to exist among the people; or how the aggregate of the political institutions, all the organs of which consist only of men, should be wise and beneficient and competent to inspire confidence if the opposite qualities belong to the individuals who constitute those organs and make up the aggregate." The secret of the strength and uniqueness of our Republic lies in the fact of our union and also that from the beginning, the church and the school-house have everywhere marked the steps of American civilization. The whole duty of the great public men of the State, patriots and warriors, orators and statemen may be admirably outlined in the words of Daniel Webster when he said—supposing George Washington back again to address the people at the occasion of the laying of the corner-stone of the addition to the Capitol on the 4th of July, 1851, when Mr. Webster made the address, "would he (Washington) not say to us: 'Ye men of this generation, I rejoice and thank God for being able to see that our labors and toils and sacrifices were not in vain. You are prosperous, you are happy, you are grateful: the fire of liberty burns brightly and steadily in your hearts, while *duty* and the *law* restrain it from bursting forth in wild and destructive conflagration. Cherish liberty as you love it; cherish its securities, as you wish to preserve it. Maintain the constitution which we labored so painfully to establish, and which has been to you such a source of inestimable blessings. Preserve the Union of the States, cemented as it was by our prayers, our tears, and our blood. Be true to God, to your country and to your duty. So shall the whole Eastern world follow the morning sun to contemplate you as a nation; so shall all generations honor you as they honor us; and so shall that Almighty power which so graciously protected us and which now protects you, shower its everlasting blessings upon you and your posterity.' "

HYGIENE AND PHYSIOLOGY OF THE SEXUAL SPHERE, AND THE PHYSICIAN'S RELATION TO THE LAITY AS REGARDS THIS SUBJECT.

BY SYDNEY BARRINGTON ELLIOTT, M.D.,
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This is a subject of universal interest, and vital importance to all mankind, whether it be considered from a physical, moral, social, or medical standpoint. It lies at the foundation of all human improvement, and enduring progress. The function of reproduction as examined into by the most scientific physiologists, and moralists, is considered to be the most influential of the human economy. Nowhere does knowledge mean so much, because here it materially influences morals, public health, population, disease, mortality; besides personal reputation, property, legitimacy, and even life itself. Yet in spite of this, it is a subject which is not taught in medical colleges, is ignored in text books on physiology—even ministers are ignorant on it; and worse than all, physicians are doing little to lift the veil of mock-modesty and hypocracy which keeps the masses in ignorance and vice. Is it not an outrage on the people that they should be allowed to live, propagate and bring up children in entire ignorance and darkness as to this *the* most important of all subjects; while every trade, profession, and occupation, and every other branch of physiology are taught, and have light thrown upon them to all? True physiology teaches that, in the proper exercise of any natural faculty, or propensity in man, there is nothing that is impure, low, sensualizing, or in any way degrading. Then is it not high time that true hygiene and physiology of the sexual organs should be taught to all? For the amount of misery, disease and crime, resulting from abuse of these organs, through ignorance, is appalling; and few would give credit to its alarming extent. In ancient times the physical side of man dominated the intellectual; in more modern times the intellectual ruled the physical; and now, the time has come for the moral faculties to govern the intellectual and all others. In early life, even while a child is yet in the cradle, bad habits are formed of touching and playing with the sexual organs, as a result of improper diet, and external physical irritation. Physiology explains this in that the sexual organs are lined with similar mucous membrane to that of the mouth, stomach, bowels and other organs; and when part of this membrane becomes irritated any part of the body covered or lined with this membrane, may become deranged. Tea, coffee, meats, spices and confectionery are the principal causes of irritation of these organs at this early age. If children are fed to develop permanent congestion and constant irritation of the pelvic organs, then precocious and entirely morbid amativeness must result. Such children become an easy prey, and are early led astray by the bad influence of morally corrupt associates, to which every child is more or less exposed. None will deny that it is best that the young, especially the males, should, to a certain extent, be informed on these things; but is it right, is it wise, is it safe that they should be initiated into this subject by those of low morals? Is it not the parents' duty to give the children a rightful knowledge of this subject at the proper time, and is it not the physician's duty to enlighten and advise the parents on such a vital matter? If children are liable to contract bad habits in infancy, they are ten-fold more so at the age of puberty, because of the sudden and rapid development of the sexual organs, with consequent great amorous impulse at this time; in fact, touching and manipulating are almost instinctively developed. As a result of such artificial excitation, a child is in the most perilous danger of contracting the baneful habit of masturbation, which may mean the ruination of the victim morally, mentally and physically. Is not the weight of responsibility tremendous on those who have the guardianship of children during this critical period? For a child without careful, watchful guidance at this time, is in a worse state than a ship without a pilot in a storm, among rocks and hidden shoals. The inseparable relation of the moral and physical life is seen at this age; and it is the greatest fallacy to endeavor to separate mind and body in educational arrangements. Children must be taught to eat, drink, dress, and exercise hygienically; and be given proper moral instruction. This would greatly tend to make them healthy in body and mind, and fit for the duties and hardships of after life; and they in turn would have well-born off-spring.

In marriage there are no means adopted to prevent the diseased and infirm from entering the matrimonial state and begetting children like themselves. People mate with everyone and anyone, regardless of health, age, temperament, and the means and ability to support and educate a family. It cannot be denied that premature, late and ill-assorted marriages, as well as those among the diseased and infirm are highly injurious to the procreation of vigorous, healthy offspring, and to public morality; nor can it be denied that this evil exists to a most alarming extent. The disease, suffering and vice resulting from such marriages, are not confined alone to one family, but are handed down from generation to generation. Is it not essential, then, for the prevention of such catastrophes that the public should be enlightened on this subject? If the unsound and the vicious, as well as those without the means and ability to support a family will marry or have illegal intercourse, is it necessary, is it right, is it just that such should beget children when there are hygienic means to prevent conception?

A large per cent. of the uterine diseases and disorders result from too frequent and improper sexual intercourse; and from the same cause an equally large per cent. of men suffer from lack of vim, tonacity and vigor. Because of ignorance should women suffer from deplorable disease and misery, and should men fail in life and fail to attain to the highest their ability is capable of on account of having their energy and life force sapped out, through this too frequent intercourse? If men and women were enlightened on this subject, they would not go to excesses, and so injure themselves and each other, they would lead healthful lives, and not constantly goad the sexual passion into abnormal intensity, by means of gross and stimulating food.

While eminent physiologists and scientists concede the wonderful and almost unlimited extent of prenatal influence, the masses of the people are entirely ignorant of it. If people, who are at all healthy, well mated and well disposed, by taking advantage of prenatal influence, can have children, who will be free from all taint of inherited disease and vice, who will only have the seeds of virtue sown, and still further, can have children who will naturally attain to the very highest in whatever calling they are adapted for; then, is it not of the most vital importance that they should be enlightened on this subject? If this were known to all, the parents, who were fit to have children, would have only those who were well born, free from all contamination, capable of almost unlimited attainment; and if those not fit to have children, whether from disease, vice or imperfection, were informed as to how to prevent conception in a proper, hygienic way, then all classes of unfortunates would soon be no more.

At the present time there is just as much disease and suffering, and consequently crime, as ever. All good influences, whether physical, intellectual or moral are entirely inadequate. For one sufferer relieved, one reform made there are countless downfalls. The effect, not the cause, is being dealt with, and while this continues, no material good can result. Every second of the hour, a human soul is born into the world and of these, the majority go to take the ranks of the unfortunates, whether of the imperfect, the vicious, or the diseased. To remedy this, is not in every case to prevent these unfortunates from coming into the world, but to take such measures that they will be born healthy in body and mind. To accomplish this end, physicians are largely responsible; for it is in their hands that the welfare of the public, to a large extent, lies. They are the fountain source of knowledge as to health; and on them must depend, not only the cure, but the prevention of disease. For if it is a high and noble thing to cure disease, it is far more so to prevent it; and as all true physicians have only the permanent welfare of the people at heart they will leave no stone unturned to accomplish this end.

THE FATTY AND FIBROID DEGENERATIONS.

BY EPHRAIM CUTTER, M.D., LL.D., AND JOHN ASHBURTON CUTTER, M.D.,
OF NEW YORK.

ALCOHOL A CAUSE OF FATTY DEGENERATION.

The use of alcohol is so common that this subject would not be well treated were not an allusion made to the effect of alcohol in producing fatty degeneration. Systemic writers so put it, and there is good reason, for alcohol is C_2H_6O while fat is CHO in varied proportion. Both are hydrocarbons and convertible with very little change in proportion. Alcohol acutely produces what fatty and fibrous degeneration produce chronically.

Drunkenness may well sometimes be called acute locomotor ataxy, and insanity, acute softening of the brain, acute paralysis and want of coördination. The mental vagaries of a drunken man are like those of people paralyzed more or less, so much so that people paralyzed from fatty brain degeneration have been mistaken and locked up as drunkards.

Some years ago a Mayor of a New Hampshire city was found in the Boston and Lowell railroad station in Boston helpless and unable to explain himself. The station officials turned him over to the police, and they locked him up as a drunkard. His family hunted him up and on being told that he never used liquor, the police authorities *found that he suffered from paralysis caused by a cerebral hæmorrhage.*

A late writer says "a too free use of oils and fatty foods and of alcoholic beverages, produces red, blotched face and swollen carbunculated nose, oily surface, erythematous swelling, and redness of the skin generally."

But not only in symptoms does alcoholism resemble fatty nerve degeneration, but the autopsies have shown fatty degeneration of liver and other organs, it may be by causing the circulation to be languid or partially impeded, as well as by kinship in chemical elements.

This effect of alcohol should induce great care in its use in diseases of fatty degeneration, as the true way to treat such cases, is to avoid the use in food and drinks of any substance which can be converted into fat, wax, lard or soap, which is a prominent feature of late food expositions. Evidence against desired.

FATTY DEGENERATION OF THE EYES.

In view of Dr. B. W. Richardson and S. Weir Mitchell's animal experiments, showing the sudden production of cataract in the eyes from the subcutaneous injection of sugar, and in view of the prevalence of eye diseases which come from degradation of ocular tissues into the various forms of fatty degeneration, in the cornea, arcus senilis; in the crystalline lens, cataract, in the aqueous humour, in the retina, in the optic nerve and flatness of the eyeball from want of proper tensile and textile strength, this subject becomes of absorbing interest to all concerned.

Food is here an agent of tremendous power for good or ill.

Once a clergyman 76 years of age, said to me that he had been forbidden by his oculists to preach or use his eyes, on account of amaurosis, which meant blindness. "Now," said he, "can you suggest anything for me?" I said I could as I deemed amaurosis one phase of fatty degeneration. He went on to the diet I told him of, which excluded carbo-hydrates —the results were that until the age of 84, he preached to the spirits in prison (so he said the last time I saw him, a few weeks before his death), in Concord, Mass., State prison, and his sight grew no worse, in place of the complete blindness predicted and which would have happened probably had he lived on ordinary diet. Fat is all right *outside* the eyeball as a cushion, but when it replaces the substance of ocular tissues it is a mischief breeder. The writer is convinced that these things should be better understood by the Blind Asylum authorities, and those who bring up children, and that they should regulate their diet, so as not to have an excess of carbo-hydrates and a loss of normal mineral salts.

Of course, cataract may come from violence, as a blow, etc., but here the circulation is impeded by the severance and dislocation of blood vessels—producing languid movements of the blood and then fatty degeneration.

I have no doubt if people were properly fed, there would be much less defects of organs of vision than now exist.

FATTY HEART.

The awful prevalence of death by heart failure makes this part of our subject a serious and impressive object of thought. We read, for example, of falling dead from his horse, a young man, and not a sign of premonition; of Secretary Windom's death at a great banquet, etc.

Now, the fatty degeneration of muscular fibrillæ along with deposits of calcareous salts and fatty degeneration in the coronary arteries will explain these deaths by showing the loss of muscular power in the organ. Although the heart can beat so hard as to rupture its own muscles, and to shake not only the person of its owner, but the bed where the owner lies, still we must look to non-traumatic causes, as the heart is protected by the chest, to explain the fatty degeneration. The greatest cause is the ingestion of bad food in my opinion; food which ferments in the alimentary canal producing carbonic acid, sulphydric acid, carburetted and sulphuretted hydrogen, which are absorbed by stomach walls and pericardium, and directly paralyze the heart (veterinarians and farmers know how soon a horse will die of colic from the paralysis of these gases just named and produced by wrong feeding), by food which lays down fat in excess and does not strengthen the cardiac muscles, to name no more.

The way to treat heart disease is to give food that makes the blood normal and hence easily circulating, produces no gases to paralyze, and lays down healthy tissues in the place of fatty ones. This can be and is done, as I have repeatedly seen. Nature will remove the fatty deposit, renew the healthy structure once more and restore normality, if she is only given the right materials with which to work.

ANGINA PECTORIS.

Angere, to choke; *pectoris*, the breast. Angina pectoris is a peculiar nervous, painful affection of the heart which is set down as a cause of death, and which needs special emphasis as coming under the head we are considering. The best time to treat is between the paroxysms, by altering the nutrition so as to take up the calcareous and other deposits in the coronary arteries, and thus give a better circulation. As I grow older, I cannot but regard the heart as an autonomy governed mostly by the cardiac plexuses of nerves (which cover its whole surface and are large as the cerebral nerve centers); that while they do not cerebrate they cardiate; that is, they regulate the beat, the action and feeling of the heart with an autonomy that leaves the brain out of the question, and cares for the heart's needs as an independent nerve center. What we call angina pectoris may come from cutting off the supply of blood, and the efforts of the nerve centers to do their vital work on this insufficient power. Be this as it may, I have seen angina pectoris cured by attention to the principle of feeding which prevents and removes fatty and calcareous degeneration. I wish this was more generally understood and acted on.

II. FIBROID DEGENERATIONS

occur very close to and along with fatty degeneration. Fibroids are tissues of the connective variety which are deposited sometimes alone, and often with muscular tissues in a partially paralyzed condition of languid and interrupted circulatory states.

When the fibrous tissues are laid down in those states they thicken, increase in size and form large, massive globar and oval tumors, as is often seen in gynecology, which resemble at times a monstrous amœba solidified. When the fibrous tissues of sheaths of nerves grow thicker, they compress the space occupied by the nerves, and paralyze as if by pinching; thus we have sclerosis in the spinal cord. Of course in the state of compression the circulation is languid and interfered with, and fatty degeneration follows as a matter of course. From the kinship of fatty degeneration and fibroid degeneration one would naturally conclude a kinship in primal cause, to wit: bad feeding. This conclusion is correct. Cases of fibroid degeneration treated by food excluding carbohydrates have done well and been cured. The frequency of fibroids in women may be due to their habit of tight lacing in addition to bad food. Certainly the corsets of women do impede circulation and make it languid. I saw one such case the other day. I stood amazed at her hazardous trifling with life and health, simply to gratify an acquiescence with a fashionable standard of æsthetics; *i. e.*, a wasp-like waist! From tight lacing and carbohydrates in excess as food women die. It is a wonder, not that so many of these angels on earth die from disease of fatty and fibroid degeneration, but that so many survive! Give us a set of mothers with non-languid and unimpeded circulation, and you will see a better race of human beings on the earth.

DEGENERATIONS ARE SUBJECT TO THE LAW OF NUTRITION.

It has been generally understood or tacitly acknowledged that there is one law of nutrition for fatty and fibroid degenerations, and another for healthy tissues. That is, if healthy tissues change, so that it requires seven years to get a new body (this is far from the truth; nails and the hair grow at the rate of at least half an inch a month; a broken bone unites in from four to six weeks; the teeth are constantly changing —we think that seven months is nearer the truth); then the fatty and fibroid degenerations will take more than seven years to be replaced. This we do not believe, *but think that the same law of rapidity of elemental changes applies to diseased and healthy tissues.*

I have seen a uterine fibroid three inches in diameter totally subside in two months' time, and I have seen fatty hearts change the pronunciation of their sounds in less than one month by food treatment alone; I have seen cases when the fatty heart has come to normality of size in less than six months. Valvular lesions take longer time.

The three factors of Bright's disease have been removed from the urine permanently and cases are now living after a lapse of from six to sixteen years.

Patients with fibrinal degeneration of liver, stomach, bowels and spinal cord, are now living in enjoyment of a normal existence. If space would permit, cases occurring in practice of the last fifteen years (to cover no more) could be given with also specific lines of treatment. The general principles of treatment have been:

1. The acceptance of the principle that the body tissues are constantly undergoing metamorphosis.
2. To get the blood into a normal condition and keep it there.
3. To get and keep the urine at a specific gravity of 1015-1020; free from bile and deposit.
4. Nos. 2 and 3, to be obtained and held by food, medicines, massage and all therapeutical agents known to medical men.
5. To keep the patient under constant observation and not to be discharged till cured or well along on the road to health.

The Ariston, 1730 Broadway, N. Y.

DOMESTIC CORRESPONDENCE.

PHILADELPHIA LETTER.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

The trustees of the Medico-Chirurgical College met on the 3rd inst., and elected Dr. W. Frank Haehnlen, Professor of Obstetrics; Dr. Wm. Easterly Ashton, Professor of Gynecology and Dr. Charles M. Seltzer, Professor of Hygiene. Dr. Benjamin T. Shimwell, was appoint Adjunct Professor of Operative Surgery; and Dr. H. H. Boone, Adjunct Professor of Chemistry. The vacant chairs in the faculty attracted a number of candidates whose claims were so good and whose endorsements were so numerous and so strong, that the trustees were embarassed in making a selection. It is hoped that some of the gentlemen who were unsuccessful on this occasion, may yet receive appointments that will secure their valuable services to this young and vigorous school.

The announcement was made in a former letter of certain additions to the faculty of Jefferson, and also of the proposed removal of Jefferson College and Hospital to South Broad street, the trustees having acquired title to an excellent location opposite the Rush library. The plans are now nearly completed, and as soon as they are adopted, work will be begun at once, as it is intended to be ready for occupancy when term of 1893-4 opens.

At the stated meeting of the College of Physicians held on June 1, the honor of Associate Fellowship, by recommendation of the Council, was conferred upon Dr. Thomas Addis Emmet, of New York, and Dr. Reginald H. Fitz, of Boston. At the preceding meeting, held May 4, Drs. Oliver Wendell Holmes, of Boston, and Wm. H. Welch of Baltimore, were elected to Associate Fellowship.

Among the evidences of the arrival of summer, we observe the opening of the city bath houses, at which, according to the daily papers, a million and a half baths were taken last year; and also the opening of the Red Bank Sanitarium for sick children some miles below the city, on the Delaware river. Of this noble charity, now in its sixteenth year of usefulness, we might say a few appreciative words. At the opening yesterday, seventeen hundred children and parents were present enjoying the scenery, and the well shaded grounds of the Association. Within the enclosure are little hammocks and swings under the trees, and games for the larger children. There is a building for preparing soup, milk, sandwiches, and other food for free distribution among the visitors, and also an administration building, which contains a hospital ward for children, who may be too sick to return to the city, and for accident and emergency cases. The little ones are accompanied by their mothers or care takers, and admission is by tickets which can be obtained by any physician, or are given upon the statement that the children are free from infectious disease. The plan is similar to the country week, in that it is intended to give poor dwellers in city courts and allies the benefit of fresh air and sunshine, and thus keep them from falling sick. The association, through the generosity of one of the managers, owns two fine steamboats which make hourly trips between the city and the Sanitarium. The effect upon the health of the thousands of children who are transported from the hot streets of the city to breathe the fresh air in this well appointed Sanitarium is incalculable. One of the most attractive features of this noble charity being its accessibility without restriction, ethnological, sociological, or theological, to all who need its ministrations, tickets being placed in the hands of physicians to distribute among their poor patients.

A similar institution on a large scale, is the Children's Sea Shore House at Atlantic City; where mothers may be sent with sick infants to spend a fortnight at the sea side, a little cottage with two rooms being awarded to each mother and infant. Older children are accommodated in wards in a fairly large administration building, where resident physicians and nurses care for them, and everything is provided for their comfort and pleasure. There is also a play house or amusement hall near the beach, where the convalescent ones may romp without disturbing the sick. Admission to this institution is also under the direction of Philadelphia physicians, patients being admitted in order of application, the capacity of the House being fully tested during the height of summer. A small rate of board is charged where patients or their friends are able to meet the charge.

While on the subject of parks, it might be said that our many small parks in different parts of the city are utilized as therapeutic agents or sanitary resorts to a great extent, by children and older persons, and probably exert a powerful influence in keeping the mortality rate of Philadelphia at such a low point as it is as compared with other large cities. There is also a charity which hunts out little children, and gives them a day's outing in Fairmont Park, on selected dates during the heated term. Music is provided by the city authorities, every afternoon in summer, in five different localities in this immense park of nearly 4,000 acres, which serves as a great sanitarium for those who are unable to leave the city, and probably exercises an important influence upon the climate and healthfulness of the northwestern portion of the city.

It is of interest to students, especially of botany, to know that the city has just purchased John Bartram's famous garden upon the river Schuylkill, opposite the southern portion of the city. This was the first botanic garden to be established in the United States, and still contains many rare trees planted by Bartram's hand, among which is a giant cypress, which was brought from Florida in his saddle-bags, and in which he always took great pride. The house of the farmer-botanist, whom Linnæus pronounced "the greatest natural botanist in the world,"—is still standing. Above the door, this inscription cut in stone can be read:

> "It is God alone, Almighty Lord,
> The Holy One by me Adored.
>
> —JOHN BARTRAM, 1770."

The house is in a good state of preservation, and with the barn, was built by Bartram's own hands. The grounds comprise about a dozen acres, but it is proposed to add a few more acres extending along the edge of the river, which will make it a very attractive spot.

The State Board of Charities has just presented to the Governor its report upon the State Hospital for the Insane, at Danville. An investigation was ordered on account of some published charges of mismanagement, which the Board has just declared to be not well founded. The Board is also making a searching inquiry into the management of the State Industrial Reformatory at Huntingdon. This institution is not a place of punishment for criminals, but is for the purpose of preventing young offenders from becoming criminals. Those ranging in age from 14 to 19 years, who have committed their first offense, are sent here to be trained in useful occupations, in order to make them self-supporting and reputable citizens, or in a word, to accomplish their reformation. From the accounts that have appeared in the daily papers of the progress of the investigation, it would appear that brutality and severity had characterized the recent administration, and that there had been lack of proper medical care. One incorrigible youth, who had been repeatedly beaten, and who was in solitary confinement, was discovered to be insane by the Board, and was sent to the State Hospital for the Insane at Norristown. The report of the Board is awaited with much interest, and it is hoped that the ultimate result of the investigation will be to place this institution on a par with the New York State Reform School at Elmira.

A curious case occurred in Camden recently. A colored woman, aged over 60, and possessed of a little property, had living with her a man to whom she was not married, but to whom she had willed her money. The brute, Moulton by name, becoming tired of the slow process of nature, decided to kill the woman, and the bright idea occurred to him that there was a demand for dissecting material over in Philadelphia. He actually applied to a medical student at the University of Pennsylvania to purchase the body, agreeing to deliver it in a good condition when wanted. Some questioning elicited the fact that the supposed cadaver was still on the hoof, upon which the student drew out and notified the Camden police, who did nothing to prevent the tragedy, which soon occurred. The murderer was taken red-handed, promptly tried and convicted. It is now suggested that the whole conduct of the affair proves the man to be insane, and he should not be punished; but it is an important question to decide whether or not the kind of insanity which finds its only expression in the commission of extraordinary and eccentric crimes, should be held to indicate irresponsibility and confer immunity from punishment for such revolting crimes. The safety of those who are still sane evidently requires that some efficient and permanent check shall be placed upon such conduct. It is better that one insane criminal should be hung than that ten innocent, law-abiding persons be brutally murdered.

A respectable man was found in the street last week, wandering about and utterly unable to give an account of himself. He was diagnosticated as a case of plain drunk by the city police, and locked up over night in a station house. The next morning he was no better, but rather worse, and he was accordingly sent to the Philadelphia Hospital, where he was found to be suffering with fracture of the skull, from which he died. It was subsequently learned that he had been spending the day with a fishing party, and that one of his companions had, in throwing out his line, struck the patient upon his head with the lead "dipsey" or weight on the line. He did not experience much discomfort at the time, but when he started for home, his friends accompanied him to the train. When he reached the city he was aphasic and did not know where he wanted to go, and unfortunately was taken in charge as above stated. An investigation of this case is likely to occur by the Director of Public Safety, as policemen have had sufficient warning upon this point, and there are surgeons connected with each police station, and a Chief Police Surgeon who could be reached at any time over the telephone.

Dr. J. Solis-Cohen recently operated at the Jefferson College Hospital upon a case of sarcoma of the throat, removing the larynx and upper part of the trachea. The patient has since done well, and was presented at the last meeting of the Philadelphia County Medical Society (May 25). At the same meeting, Dr. Wm. H. Morrison reported cases of brain surgery in his own practice, one being a case of brain abscess with recovery after trephining; also a case where trephining was performed for epilepsy; and a very interesting case of linear craniotomy for idiocy, performed a year ago, with report of present improved condition of the patient.

Dr. Laplace operated last month upon a boy 8 years of age at the Philadelphia Hospital for microcephaly, or premature ossification of the sutures. The child had only rudimentary intelligence, was pleased with music, but did not understand speech, and did not articulate. Linear craniotomy, or craniectomy, was performed for a distance of about 10 centimetres along the left side of the median suture. The child died the same evening from shock.

The Alumni Association of Jefferson College held a social meeting in the Pharmaceutical Laboratory on the 31st ult., holding what was called a "Smoker," which is a German student "Kneipe." Such meetings are useful in promoting sociability and acquaintance among the alumni.

Antipyrin for Diabetes.

To the Editor of the Journal of the American Medical Association:

I read with much interest the article on the treatment of Diabetes Mellitus, in your issue of May 28, 1892, and take the liberty of adding a drug to Dr. Riggs' list of four, because it has recently served me so signally.

Sometime since I was called upon to treat a lady who had been suffering from this trouble for five previous years.

When I took charge of her case she was passing a large amount of urine containing 20 per cent. of sugar.

In treating the case I used all the regulation drugs, among them the four that are the basis of the aforementioned article, but was unable to make any definite impression in her case.

In despair, partly, and on theoretical grounds I put the patient on antipyrin for one week, and was much delighted to find at the end of this period that the sugar was reduced to one half per cent.

I was compelled to stop the antipyrin on account of its usual unfortunate effect on the heart-action, and returned to my previous treatment with bromide of arsenic. In about a month the urine showed an increase of sugar to 10 per cent. I then made another trial with the antipyrin for a week and succeeded in reducing the sugar to one quarter per cent., in spite of the fact that I was glad not to continue its administration longer on account of the alarming prostration and cardiac depression which existed at the close of the week.

The lady then commenced to take a combination of Fowler's solution and citrate of lithia three times a day before meals in Vichy water in connection with an anti-diabetic diet and saccharin, and her urine has continued at one quarter per cent. of sugar and moderate in quantity ever since, uniformly.

Fred'k F. C. Demarest, M. D.

Passaic, N. J., June 1, 1892.

NECROLOGY.

Dr. Charles E. de la Vergne, of Brooklyn, died June 4, in the thirty-fifth year of his age. He was born and educated in Brooklyn, and became with little delay one of the prominent juniors of his profession. He was chosen to numerous places of responsibility. His fatal malady was diphtheria, contracted in the course of professional duties.

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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1271, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, JUNE 18, 1892.

EXCLUSIVE MEDICAL ATTENDANCE AND ITS MONEY-VALUE.

It not infrequently happens that a physician is called upon to give his sole attention to a single patient. This is especially the case where a medical man is called to some distant point to do an operation or to give advice as a consultant. Or again, a physician may be led to give his services to an invalid who must needs be attended when travelling from one place to another.

So far as we know, the unit-measure of value for such exclusive services has never been authoritatively or legally settled. Is there any unit or *per diem* charge which can be stated as just and proper—in default of an explicit and mutual agreement made beforehand?

A noteworthy case has recently been made public which affords a partial solution to the problem. A law-suit in New York City and the outcome of a jury's prolonged deliberations has been one of the foremost topics before the medical fraternity of that city. Dr. William M. Polk had occasion to bring suit for the services of his business associate, Dr. Barrows. The latter gentleman was called to Atlanta, Georgia, as a consultant in a case of fever. He was absent in that city about ten days, and a bill was presented, virtually placing a *per diem* value of $250 on his services; the gross amount of the bill was $2,500. Payment having been refused, Dr. Polk felt constrained to bring suit. The case was well tried and will undoubtedly serve as a precedent in future cases of exclusive attendance. Among the witnesses who testified for the plaintiff were Drs. Wyeth, Loomis, Gibney and Anderton. It will be readily recognized how large a proportion of the *dramatis personæ* were men of Southern origin. Dr. John A. Wyeth stated that he would have expected to receive $300 a day for services such as were rendered in this case. Dr. A. L. Loomis testified that he would not consider himself recompensed for exclusive services at less than $240 *per diem* in New York and $500 if called to Atlanta. Dr. Gibney placed a value of not less than $25 *per horam* on his services if called to a distant city, and in regard to the case under trial he thought the physician was entitled to from $10 to $15 *per horam*. Dr. Anderton, who for many years had been the late Dr. Fordyce Barker's assistant, testified that the bill of Dr. Polk was just and fair. The depositions of two physicians of Atlanta were read, giving it as their opinion that the services of the consultant from New York—who "only made a few suggestions about some minor matters"—would be recompensed by a $50 *per diem* payment.

The jury in this case was "out" a long time—over twenty hours. The discrepant views of values held by the medical witnesses were reflected, in a compound ratio, by the jurymen. A verdict was only reached after much debate and many mutual concessions, but in the end they awarded $1,500 to the plaintiff, which has the effect of declaring that—in default of an early agreement or contract—the entire time of a physician is worth $150 a day, or six dollars an hour.

This case will probably have the effect of calling the attention of the profession to the importance of some prearrangement of rates before exclusive services are rendered. It is highly obnoxious to the average practitioner to be compelled in public to say how much his time is worth by the day or hour, and afterwards to find his name in the public prints, under captions such as "What it costs to get Sick," "Doctors Disagree Again" or "Exorbitant Medical Charges." Even if a plaintiff should recover the full amount of his bill, how is he to be recompensed for his loss of time and other inconveniences attendant upon even suits that are won?

PESTILENTIAL ENVIRONMENTS AT AMOY.

DR. EDWARD BEDLOE, formerly of Philadelphia, is our Consul to Amoy, China. That city is said to be "the dirtiest city on the face of the globe." From a report of DR. BEDLOE, relative to past and future of cholera at that place, we infer that its bad repute is thoroughly deserved.

The city is a relic of the past, and has neither sewers nor introduced water-supply. Some of the streets are two feet *wide*, and from that point extend to six feet. A wheeled vehicle cannot use them, and an equestrian could not turn all the corners without at times dismounting. Here and there are left open spaces or plazas dug out so as to serve as a cesspool for several blocks. Into these cesspits the streets and houses discharge their filth. This filth is cultivated on the surface and made to yield eight crops of water-cress or onions or water-lilies. Under a tropically hot sun these plants thrive marvelously and produce enough, upon a single square, to keep a thousand souls from starvation.

Pigs are everywhere, as also the pariah-dog. They are so starved that all kinds of offal are welcome to them. They leave nothing for the mouse, rat or cat. These latter have a struggle for survival. The rat's lot is an especially unhappy one, for there is a price upon his head as a highly prized delicacy among the poorer classes. What the pigs cannot stomach is thrown into the street, and lies there until washed away by the rain, or carried onward by the feet of the pedestrian multitude. The dogs scratch this street filth over and it is further scattered, kept stirred up and offensive. It is only justice to the pig and dog to say that they are for the place and climate excellent scavengers. They devour almost everything that is thrown away. It is said that the pig consumes human excrement and urine. Without them the population would be *swept away by pestilence in thirty days.*

The grave-yards and the inhabited districts of Amoy are intermingled. In one cemetery the tombstones crowd one another so closely that they form one solid white surface of rock, brick, pottery or cement, covering one million square feet. Some of the very old stones get crowded out altogether and are taken by the living for building materials. It is said that there, in another holy burial plot, not less than 25,000 bodies are buried vertically to save space. These bodies lie or stand in a plot of ground of an area of an equal number of square feet. Amoy has a million of living population and four times as many in the graveyards. *The wells are shallow*, some are sunk on the very edges of the cemeteries and even in among the tombs themselves. The water is almost invariably muddy-looking, and discolored by the perpetual turning up of the soil.

Although cremation is practiced by the Chinese, it does not take place until after an interment of six months or of some years. No grave may be opened within the year without a *permit of the authorities.* Burial generally is ordered within twenty-four hours after death. Many families throw lime on the coffin until it is entirely covered and then the grave is filled with earth. This is not a bad procedure in a pestilential locality, but it is done because it is believed to give the occupant good fortune in his underworld adventures. The building regulations provide that no house shall be built more than two stories high and shall not obstruct the light and ventilation of the neighbors. In this way the terrible over crowding, that would otherwise take place, is prevented. On the other hand, the benefits of quarantine and isolation, in times of epidemic, are ignored. The house where cholera is, or has just been, is frequently crowded with friends, priests and acolytes, who along with the members of the family, seek to exorcise the particular evil spirit which controls or manages the disease.

THE DETROIT MEETING.

The gathering of members of the American Medical Association in Detroit, during the past week, will be remembered as one of the most profitable of the forty-three annual meetings of this large body of American Practitioners of Medicine.

The attendance was large and included many men, whose names are household words in the medical world. Many were there whose attainments give *them a firm and secure footing* on the upper rungs of our professional ladder.

Three hundred and thirty papers on the official program attested the results of many hours of patient toil and thought to be freely, gladly given forth as so many units in a common treasury for the benefit of all.

The action of the Association in transferring most of the business that usually comes before the general sessions, to an executive committee, composed of three from each of the Sections, will be a most satisfactory time saver.

A resolution directing the President to appoint a committee of five to confer with similar committees from the New York State Society and the New York State Association, for the purpose of harmonizing differences met with unanimous approval.

After this action a resolution was unanimously adopted directing the appointment of a committee to revise the Code of Ethics, the Constitution and By-laws of the Association, and to report their recommendations at the next meeting.

It will be noted that this action was unanimous.

While councils of conservative moderation will no doubt prevail, the desire and disposition of the members to place themselves and the Association in accord with the more liberal thought of the day, will find definite expression in the report of this important committee.

The Nominating Committee closed its work by unanimously adopting a resolution which was intended to emphasize the already expressed wish of the Association in this particular.

This action will be received with acclamation and earnest approval by the entire medical profession, and be the direct means of harmonizing many discordant elements. In effect it will result in a practical unification of our whole profession. Excuses for holding aloof from County, State and National Societies will be blotted out, and only muttered by professional Ishmaelites.

The work outlined above, enables us to take a forecast of the future, in which we already see many rifts in the clouds which have heretofore shadowed the attempts made to revise our organic laws.

The medical profession of Detroit were united as one great, large hearted man with arms wide open with a generous welcome to every member of the Association. The doors to the homes of Detroit people swung easily on their hinges as they opened to hospitably receive and entertain the members of the Association. The reception given by the local profession at the Armory was superb. While those given by Mayor Pingree, General Alger, Mr. Stearns and Mr. Geo. S. Davis were as if of the royal blood given to the nobility. Kings and Princes were we all on that occasion.

The great laboratories of Messrs. Parke, Davis & Co. were continuously open to visitors, and the entertainment given by this firm was of the most lavish character. Every day carriage rides, boat rides, lunches, and in fact everything an Alladin could dream of, were provided for the ladies who accompanied the delegates.

At the conclusion every delegate and every lady left Detroit convinced that Paradise was not far from Detroit, and its inhabitants first cousins of the people of that city, which we now know has quarter of a million of inhabitants, and is situated on the banks of the Detroit River, in the State of Michigan.

EDITORIAL NOTES.

Dr. Holmes in Praise of Preventive Medicine.—Dr. Oliver W. Holmes has always been a keen admirer of the hygienic functions of medicine. He is still firm in that opinion. From a letter of his, bearing date of May last, we borrow the following sentence: "I am an out-and-out believer in *preventive* measures against diseases as contrasted with what are called *curative* agencies."

In praising hygiene at the expense of medication, Dr. Holmes is simply commending the bridge that carries him safely. All his life long, his need for drugs has been kept down to the minimum, by reason of his prophylactic watchfulness. His physique, even in his green and salad days, was never so robust as to warrant any but the simplest courses of life. The laws of simple living having become ingrained he can neither tolerate nor commend the potent potions of the pharmacy.

The Female Asylum Physician.—In Virginia, the proposed legislation requiring that there shall be one female assistant at each of the hospitals for the insane progressed favorably at the last session of the Legislature, although it did not pass both houses. The friends of the proposed law are not discouraged. The lower house of the Legislature may be considered as committed to the measure; the Senate rejected the bill. Some of the ablest of the Senators are and will continue to be its advocates. Two years hence the bill will be reintroduced, and thousands of citizens will have discussed the merits of the proposition. The *Richmond Despatch* predicts that the next Senate will pass the recently rejected bill, or one like it, which will result in "the boards of directors being required by law to have at least one female physician in each asylum, who, under the direction of the Superintendent, shall be made to give her attention to the female insane."

North Carolina Board of Health.—The May *Bulletin* of this Board has just been published. We notice that Dr. W. H. Harrell, of Williamston, has become a member, taking the place formerly held by Dr. J. M. Baker of Tarboro. An article on the ventilation of churches and chapels is the sanitary leader of this last issue of the *Bulletin.*

Injuries to the Spinal Cord and its Envelopes without Fracture of the Spine.—Dr. N. Senn, of Chicago, chairman of the special committee on programme for the sixth annual meeting of the National Association of Railway Surgeons, reports the above as one of the topics for consideration.

1. History.
2. Experimental Research.
3. Anatomical Landmarks.
4. Spinal Localization.
5. Diagnosis from the Standpoint of the Neurologist.
6. Pathology and Pathological Anatomy.
7. Prognosis.
8. Treatment.
9. Medico-legal Aspects.
10. Statistics of the Amount of Money Paid by the Railroads of the United States during the last ten years for Alleged Injuries of the Spine.

Each of these sub-heads is to be considered in a thirty-minute paper, after which the subject will be open to discussion by the entire Association, with the best talent in the Association leading, and in this way it will systematically dispose of this perplexing subject in a scientific manner, and collect together a volume of material of inestimable value both to surgeons and railway companies.

ABSTRACTS.

Treatment of Intestinal Dyspepsia. (*Leading Article, Boston Med. and Surg. Journal,* March 17, 1892.)

As this form of dyspepsia is generally, predominantly, a dyspepsia of starches, there is a leading indication to abstain from amylaceous and saccharine articles of diet. There should be a maximum of albuminoids—meat, eggs, fish—and a minimum of carbohydrates and fats. Brilliant results have been attained by a diet of raw meat—6 to 10 ozs. of lean beef or mutton, reduced to a pulp and cooked but slightly, if at all; to be eaten well seasoned with a little bread, but without vegetables. Thin slices of underdone roast meat, fresh broiled fish, raw oysters and other shell fish, soft boiled eggs, boiled ham, together with sour kraut, smoked herring, a little stale cheese, etc., have been recommended, the latter articles being particularly unlikely to undergo putrefactive decomposition.

Chronic indigestion of this type is the result of long-continued dietetic errors, and in its treatment, the dietetic plan marked out above should be adhered to as closely as possible. By way of medication, intestinal antisepsis is indicated, and is unquestionably of some service. For this purpose combinations of chalk, bismuth, magnesia, salol, salicylate of soda and naphthol are valuable. The patient may take after each meal a powder consisting of 5 grs. each of prepared chalk, magnesia and salol, or 5 grs. each of salicylate of bismuth and naphthol. Nux vomica and columbo are also valuable. Diastases often are of service. Either malt or pancreatic diastases may be used. They are to be given during the meal. [They probably act by digesting the starch in the stomach, and favoring absorption of the resulting sugar before it reaches the intestine.]

Laxatives often prove beneficial, but must be used judiciously, and with the single purpose of emptying the bowel of its fermenting contents. Rhubarb, senna, aloes, sulphur, cascara and magnesia are among the best laxatives in this condition.

Dr. G. B. Wood says; "The remedy which we have found most effective in the permanent cure of a disposition to the accumulation of flatus in the bowels, is an infusion made with ½ oz. of columbo, ½ oz. of ginger, a drachm of senna and a pint of boiling water, and given in the dose of a wineglassful three times a day."

PRIMARY DENTITION IN ITS RELATION TO RICKETS. (*Lancet*, May 14, 1892.)

Drs. Geo. Carpenter, and R. Dennison Pedley, of the Evelina Hospital for Sick Children, have examined the mouths of 500 children with obvious rickets, and have found that the results were not confirmatory of the prevelent ideas on the subject. Briefly tabulated their results are as follows: *A*. In the vast majority of patients, the teeth are perfect in structure. There is no deficiency of enamel. The teeth do not become loose and rapidly fall out. There is no special proneness to decay. *B*. In those rare cases where the teeth have been found defective a history of inherited syphilis has been obtained. *C*. Dentition is undoubtedly delayed.

While not holding with Panot that rickets is a syphilitic manifestation, these observers find that the syphilitic cachexia when present, is a very powerful agent in the production of rickets. They say that in a large number of rickety children a syphilitic history can be obtained if inquired for, and the observer is not infrequently startled by the appearance in some such cases of a slight syphilitic rash on the buttocks, anal condylomata, specific ulcer in the mouth, eye trouble or what not, in a child who, for all the signs that were present at the time of the first examination, would otherwise have passed as rickety merely. These signs showed that the disease was smouldering on, and that the syphilitic cachexia was underlying the rickety trouble. On this account they do not attach that importance to the heading *B* which they might otherwise have done. What they do claim however, is that it is not proven that rickets is responsible for all the dental troubles that have been laid to its charge; that the association of rickets with carious teeth as between cause and effect, is merely an assumption; and that caries does not take place in any case in rickety children to anything like the extent the text-books would lead one to infer.

STOMATITIS APHTHOSA (*Archives of Pediatrics*, May, 1892).

Forcheimer presents the following conclusions:

I. Stomatitis aphthosa is a disease produced by some form of deleterious material in the circulation.

II. This material may have its origin in various processes, bacterial or otherwise.

III. This material may, therefore, be of various kinds.

IV. This material acts upon a nerve or nerves, or upon a nerve-centre or nerve-centres.

V. Producing an herpetic eruption which is the aphthous process.

AUTO-INTOXICATIONS. (*Pacific Record of Medicine and Surgery, March 15, 1892.*)

Albertoni draws from his experiences the following conclusions: 1. In the human body there is a continual development of toxic substances. 2. The principal seat of their development is the intestine, and, in the first place, the large intestine, while they originate in a lesser degree in the muscles, in the glands, and in other tissues. 3. The best known process which causes auto-intoxication, is putrefaction. 4. The known substances which come into play in the intoxication, are: Peptoxine, organic bases (leucomaine, ptomaine), products of the aromatic series (indol, skatol, phenol, aromatic acids, etc.), lactic acid and volatile sebacic acids, ammonia, methan, hydrosulphuric acid, methylmercaptan, aceton). 5. Many of these substances are forming incessantly during state of health, albeit in small quantities, different according to individuality. 6. The mechanisms which limit or prevent auto-intoxications are: In the stomachic-intestinal canal the presence of hydrochloric acid, other acids, glucose, etc., in the other organism destruction of the toxic substances by oxygen and their rapid elimination. 7. All conditions tending to induce an alteration of said mechanisms may become the cause of auto-intoxication; accordingly in the first place, diseases of the digestive tract, diseases limiting the intervention of oxygen (anæmia, chlorosis, etc.) and diseases which cause a violent destruction of tissues. Diseases of the organs of secretion and elimination are always apt to induce an indirect auto-intoxication. 8. Fatigue and over-exertions, insolation, fasting, lead to auto-intoxications in consequence of increased and abnormal development of regressive products, which it is not possible to secrete and transform with the necessary rapidity. 9. Many pathogenic microörganisms may induce a secondary auto-intoxication by giving rise through their activity to the formation of specific toxic substances in the various tissues. 10. General diagnosis of auto-intoxication has its principal element in the discovery of known toxic substances, in the urine, the fæces, the liquid secretions, or the tissues. In this connection the discovery of sulphuric acid, phenol, indican, aceton, ammonia, diamine, the alkaloids, pepton, oxybutyric acid has attained a positive importance. The toxicity of urine has failed as yet to reach much importance, although it is sometimes a serious element. 11. Among the forms of auto-intoxication which have been most investigated, we have to mention, besides those resulting from retention of uric and biliary elements, the acid auto-intoxication, the auto-intoxication originating from aromatic substances (neuroparalytic auto-int.), the auto-intoxication caused by dyamine (mystic cystinuvia) and acetonæmia. 12. Auto-intoxication is most frequently observed as a complication in other diseases; this fact is difficult to explain. 13. A fundamental question in the theory of auto-intoxication, as well as of the biologic transformation of matter generally, is the question of its anærobic origin in the interior of tissues, as in the putrid fermentations of toxic products, and how the intervention of oxygen influences the process of auto-intoxication. 14. The discovery of action has more significance as demonstrating the presence of a process of auto-intoxication, than the toxicity of aceton itself. 15. The toxines deserve an attentive investigation with regard to the agents giving occasion to auto-intoxications.—*From the Proceedings of the 4th Italian Congress for Internal Medicine, in Rome.*

Empyema in Children.—(L. Emmett Holt, *Archives of Pediatrics*, May, 1892.)

Empyema is quite a common condition in childhood; fully nineteen out of twenty cases seen follow pneumonia. It is due to the pneumococcus which finds its way into the pleura, and sets up inflammation there. Other causes in children under three years are so rare that we can practically eliminate them. In adults, tuberculosis is a common cause, but a very small per centage of cases in children are due to it.

The physical signs are few but very significant. There is flatness on percussion, which with children, almost never occurs in pneumonia, and is always suggestive of fluid, especially if it is found all over one side, as it is rare that pneumonia involves the whole of one lung. The displacement of the apex beat of the heart is always suggestive of fluid. There is absence of râles and friction sounds, which are always found in resolving pneumonia. If râles are heard all over the lung save a small area, look out for sacculated empyema. Bronchial breathing is practically the rule in empyema, it being distant and feeble. If the symptoms are suggestive and the physical signs obscure, puncture. And puncture often enough to be certain. By way of treatment Holt condemns aspiration and advises incision with free drainage, and with local anæsthesia only. Rib resection is usually unnecessary.

SOCIETY PROCEEDINGS.

American Surgical Association.

Wednesday—Afternoon Session.

(Concluded from page 762.)

Dr. T. F. Prewitt, of St. Louis, remarked that the selection of the operation depended largely upon the extent and location of the disease of the tongue. Where the cancer is limited to the tongue an operation through the mouth is sufficient. If the floor of the mouth be involved and the disease extend out to the bones, something more is needed. In one or two instances he had resected portions of the jaw. He did not think that the primary hæmorrhage was to be dreaded, but he had seen death from secondary hæmorrhage in a case of diseased arteries.

Dr. W. H. Carmalt, of Philadelphia, had found a great deal of advantage from preliminary tracheotomy. The most frequent cause of death after operation is septic pneumonia from the inhalation of infective material. Tracheotomy not only facilitates operation, but it obviates the danger of septic pneumonia. In his last case he had operated, doing tracheotomy and packing the fauces. The patient did well. At the end of four days he removed the tracheal tube and allowed the patient to breathe by the mouth. The next day the temperature was up to 102°. The tube was immediately reintroduced and the fauces packed, and in twenty-four hours the temperature was again normal. In cases where the glands are involved, he advised the Kocher operation. In regard to after-treatment he had found that patients bear the presence of the œsophageal tube better than its reintroduction.

Dr. R. F. Weir had removed the tongue five times by the Whitehead operation, and five times by the Kocher operation, and had removed one-half the tongue ten times by Whitehead's operation. Where the floor of the mouth or the glands are involved he prefers Kocher's operation. He considered it good surgery, where there were signs of glandular enlargement in the submaxillary space, to cut down in front of and behind the sterno-mastoid muscle and examine the condition of the lymphatic glands in this situation. In the Kocher operation he prefers tracheotomy, and does it a few days before if there is sufficient time. He considers it a great advantage both at the time of operation and afterwards.

Dr. A. G. Gerster, of New York, had extirpated the tongue in various ways in nineteen cases. He thought that the more thorough and radical the operation the better were the results. He advocated removal of the affected glands, and the use of tracheotomy. This enables the operation to be more thoroughly done, and with more comfort to the surgeon and less danger to the patient. In this region as in every other region of the body, thorough operation requires thorough anæsthesia.

Dr. T. J. Dunott, of Harrisburg, reported a case where the tongue was greatly enlarged and protruded from the mouth. The operation was done several years ago, and the patient is still living and well.

Dr. Jos. Ransohoff, of Cincinnati, reported one case in which he operated by the Mordant Baker method four and one-half years ago, and there had been no relapse. In other cases on which he had operated, he had not obtained the same success. In every case where he did not do a Kocher operation he made an incision in the submaxillary triangle in order to put in a large drainage tube reaching to the floor of the mouth. This opening gives an opportunity for the examination of the glands. If there is enlargement, the glands can be turned out or the incision enlarged if necessary.

Dr. W. H. Carmalt, of New Haven, Conn., read a paper entitled:

CONDITIONS DEMANDING EXCISION OF THE GLOBE OF THE EYE.

As a rule, the question of the propriety of enucleating an eye will be referred to the specialist, but there are cases of emergency in which the general surgeon is called upon to act promptly. In the consideration of this subject we are at once confronted with it from two different standpoints, according as we have to deal with blind eyes or with those in which there is a more or less useful degree of vision.

In the case of blind eyes, the objections to the operation are two: 1, the danger of the operation *per se;* and 2, the cosmetic appearance. Meningitis has occurred in some cases operated on in the acute stage of suppurative panophthalmitis. In these cases, the removal should be made as soon as the evidences of suppuration are unmistakable. In cases of lacerated or penetrating wound with loss of vision, the operation is better done before suppuration occurs, or as soon as the evidences of suppuration are sufficiently plain.

There is no one condition for which eyes are so frequently excised as in sympathetic ophthalmitis (threatened or actual). The pathology of the sympathetic process is still a matter of controversy. In a case presenting the irritative symptoms indicating the beginning of sympathetic ophthalmitis, with the other eye lost from injury, or certain forms of disease yet to be mentioned, it is the duty of the surgeon to advise in the most unqualified manner the enucleation of the blind eye. The irritative stage is usually short. It is more or less rapidly followed by diminution of vision due to an organic lesion. In the acutely inflammatory stage of the sympathetic disease, the removal of the "excitor" is not so beneficial to the "sympathizer," and may be harmful, adding fuel to an already flaming fire. In these cases the operation should be postponed until the active process is subdued. It must also be remembered that in a small number (perhaps about 10 per cent.), the sympathetic inflammation may come on after the removal of the excitor, and in about 2 per cent. it has been thought to have been the result of operation. The conditions liable to give rise to sympathetic ophthalmitis are: 1, injuries; 2, diseases. Injuries: *a*, lacerating or perforating wounds, so severe that the result will inevitably be atrophy of the globe; *b*, the lodgment of a foreign body in the interior of the globe; *c*, a penetrating wound involving the ciliary region. Diseases: *a*, recurring or chronic iridochoroiditis from whatever cause; *b*, atrophy of globe following purulent keratitis, or panophthalmitis, or in which ossific degeneration of the retina has taken place; *c*, atrophy of the globe from any cause with painful ciliary region. Time does not confer immunity against sympathetic disease. There is considerable difference as to liability to the disease in the various injuries and diseases. This sequence is more frequent after injuries than after non-traumatic diseases, and of injuries, nothing is so potent as the lodgment of a foreign body in the eye.

The pain which comes from the intra-ocular pressure of a chronic glaucomatous degeneration is frequently so excessive as to justify the removal of the offending organ—other means of treatment having failed.

Various diseases of the eye leave the organ in conditions so inconvenient or repulsive in appearance that the surgeon's aid is sought for purely cosmetic purposes. Are there, however, no procedures that may be substituted and avoid so severe a mutilation? In earlier days of ophthalmology, abscission of the anterior segment of the globe was often practiced. In this operation more or less evisceration of the contents of the globe takes place. As a matter of fact, the result is about the same as after enucleation, and sympathetic ophthalmia may follow the operation. The opinion of the author was decidedly against such risky procedures—enucleation of the misshapen eye, with the introduction of an artificial eye, is the only admissible operation. The modern expedient of tattooing a white cicatrix of the cornea without staphyloma has resulted in sympathetic disease.

The enucleation of blind eyes that are the seat of phosphenes, but like many operations undertaken to relieve a symptom of nerve irritation, its utility is doubtful.

In regard to the enucleation of eyes only partially blind, it goes without saying that a condition of things which can allow it to be seriously contemplated must apply with greater force to eyes already blind. The chances of accident or independent disease to the remaining eye are sufficiently great to justify the statement that nothing but the certainty of ultimate blindness to both, or of death, can permit us to consider such a procedure.

Most of the intra-ocular tumors are sufficiently dangerous to life to demand the removal of the organ in which they are contained, as the only hope that can be entertained of successfully combating their encroachment. They are of two classes: the granulomata and the sarcomata.

The extra-ocular growths are of greater variety of histological structure. In sarcomata of the orbit removal of the globe is often required, even when not implicated in the disease.

Should an eye which retains an appreciable degree of vision be removed in order to arrest a threatened or prospective attack of sympathetic disease in the fellow? It is certainly unjustifiable to remove an injured but still seeing eye, though it may be an excitor of sympathetic disease. The result of the operation has not been sufficiently successful in arresting the progress of the malady after it has begun, to warrant its recommendation. The only condition in which it was considered justifiable to remove a still seeing eye, for sympathetic disease, is where a foreign body remains in the eye. In these cases sympathetic disease is very apt to follow.

Executive Session.—The following officers were elected: President, Dr. N. Senn, of Chicago; Vice-presidents, Dr. W. W. Keen, Philadelphia, Dr. Chas. B Porter, Boston; Secretary, Dr. J. R. Weist, Richmond, Ind.; Treasurer, Dr. John B. Roberts, Philadelphia; Recorder, Dr. J. Ewing Mears, Philadelphia; Members of Council, Dr. Roswell Park, of Buffalo, and Dr. R. F. Weir, New York.

Members of the Executive Committee of the Congress of American Physicians and Surgeons: Dr. L. McLane Tiffany, Baltimore; Alternate, Dr. James McCann, Pittsburg. It was decided to hold the next meeting in Buffalo, in May, 1893, and Dr. Roswell Park was elected Chairman of the Committee of Arrangements.

The following were elected to membership: Dr. John B. Deaver, Philadelphia: Dr. Frederick H. Gerrish, Portland, Me; Dr. Wm. S. Halstead, Baltimore, Md., Dr. Charles B. McBurney, New York, and Dr. Henry R. Wharton, Philadelphia.

Adjournment of Wednesday afternoon session.

THURSDAY—MORNING SESSION.

The following papers were read by title: "Surgical Operations in Persons suffering from Diseases not connected with that necessitating the Operation, such as Chronic Malarial Poisoning, Diabetes, Organic Heart Disease, etc.," by W. T. Briggs, M.D., Nashville, Tenn.; "Ancient Contractures of the Hip and Knee Joints," by T. F. Prewitt, M.D., St. Louis, Mo.; "A Case of Gastrorrhaphy for Diminution of a Dilated Stomach," by Robert F. Weir, M.D., of New York; "A Case of a rare form of Upward Dislocation of the Hip," by Lewis A. Stimson, M.D., of New York; "Report of Operations for Spina Bifida and Encephalocele," by A. T. Cabot, M.D., Boston; "Ulcer of the Stomach; proposed Surgical Treatment," by E. H. Bradford, M.D., Boston; "Congenital Cyst of the Pancreas, Removal, Recovery. Tumor of Cæcum, causing Intussusception; Laparotomy, Reduction of Intussusception and Removal of Tumor. Death," by M. H. Richardson, M.D., Boston; "Hernia of Left Fallopian Tube," by John Homans, M.D., Boston; "A Case of Sarcoma of the Tonsil. A Case of Chronic Appendicitis," by Stephen H. Weeks, M.D., Portland, Me.; "Diagnosis and Successful Treatment of Some Cases of Cerebral Tumor," by F. S. Dennis, M.D., New York; "Lymphangioma of the Neck," by C. B. Nancrede, M.D., Ann Arbor; "Successful Case of Enterectomy and Enterorrhaphy, with Removal of Sarcoma of Mesentery. Successful Case of Trephining of the Spine for Fracture of Laminæ and Partial Dislocation of Bodies of eleventh and twelfth Dorsal Vertebræ," by James McCann, M.D., Pittsburgh; "A Case of Removal of Enlarged Accessory Thyroid Gland at the Base of the Tongue," by J. Collins Warren, M.D., Boston.

The morning session was held at the Boston City Hospital, where a number of interesting cases were exhibited.

In the afternoon, at the invitation of the President of the Board of Health, the Association inspected the method employed for the disposal of the city sewerage, and visited the hospital under the charge of the Board of Charities.

The Association then adjourned to meet in Buffalo in May, 1893.

Medical Society of the State of Pennsylvania.

Forty-Second Annual Meeting.

The Society convened at Harrisburg, May 17. Was called to order at 9:30 A.M. by the President, Dr. S. L. Kurtz, of Reading. After prayer, addresses of welcome were made by the Governor of Pennsylvania, the mayor of Harrisburg and the chairman of Committee of Arrangements. The treasurer's report showed a balance of $1,500. The Committee of Publication had distributed the volumes of transactions of 1891 to all parts of the State, over 2,000 copies. Calls for the Pan-American Congress, etc., were read and referred to the Committee of Nominations.

Dr. W. D. Kearns, of Pittsburg, read a paper opposing the averaging of pupils by the memorizing method and offered resolutions thereon which were referred to a special committee.

A paper on "Care of Epileptics" was read by Dr. Diller and after some discussion its suggestion for a government asylum for such was referred to special committee, which, however, failed to report.

Dr. G. H. Rohrer, Lancaster, read the

ADDRESS ON OTOLOGY,

being suggestions as to the care of the ear and office work as it occurs daily in every practice. Care is always needed in the examination of the external meatus. Have a good reflector, a bright light, introduce the speculum with great caution, and know what you are to look for. Don't mistake the projecting arm of the malleus for a foreign body. For impacted cerumen syringing with warm water is best. It crumbles and is swept out by the current. Or use a flat probe to press it gently from the walls and take away the mass with a small forceps. Eczema of the external meatus is very common. When acute, treat it as anywhere else. Chronic, use a 2 to 4 per cent. unguent of ammoniated mercury. Furuncles acute need a leech in front of the ear, the hot douche and black wash. Incise when ready. Then use the peroxide of hydrogen freely. When the middle ear is inflamed suppuration soon ensues, use morphia or atropia in a warm solution, but be careful as to the strength lest a perforation exist and then poisoning will result from swallowing it. Aconite internally for the pain, and keep the ear clear of discharge. Pulverized borax blown into the passage and left to dry will act best.

Delegates from the Pennsylvania Pharmaceutical Association were then presented and formally received. The delegates to that body reported and were continued.

Dr. Edward Jackson, Philadelphia, read a paper on

MECHANICAL TREATMENT OF TRACHOMA,

and described a useful roller to express the matter from the everted upper lid. Cocaine anæsthesia may be employed, but ether is better and the work must be done carefully and thoroughly, and the result usually is complete cure.

Dr. J. M. Batten, Pittsburg, read a paper on

DIPHTHERIA,

giving details of cases. Calomel he used freely. Some cases do best with tincture of iron and chlorate of potassium, and whiskey, while others require calomel or other mercurial. Prophylaxis is of great importance and strict care must be given to the local treatment.

Discussion on this was animated, Dr. McCormick insisting on the importance of the bichloride treatment by spray, which he claimed at once put a line of demarcation and the disease rapidly disappeared. Seventy-four consecutive cases were cured; he used 1 to 1,500 solution every hour. It never fails. Did not need iron and potash, nor any constitutional treatment. Only whiskey freely and fully.

Dr. Ulrich, Chester, used calomel in one case in immense doses and the patient recovered. He regarded it as a constitutional disease and this the local expression. Chlorate of potash he used in large doses, never saw any bad effects on the kidney nor other organ. This and membrane croup are not identical. Dr. Dunn, Pittsburg, used the peroxide of hydrogen. It deodorizes immediately and destroys the membrane.

Dr. Bauer, Philadelphia, always had good results with calomel.

Dr. I. C. Gable, York, did not regard these as dual diseases. He calls all diphtheria a constitutional disease with local trouble, all require isolation. He endorsed the alcohol treatment, intoxicate the patient if possible, if the stomach refuses the whiskey give it by the rectum. Later, iron tonics, and locally he applied equal parts of tr. ferri chloride and glycerine.

Dr. Hiram Corson, Montgomery county, used cold to the throat, ever since 1850, ice in the mouth; it is local solely, hence why use whiskey?

Dr. H. A. Hare, Philadelphia, regarded the explanation of the apparent difference in diphtheria and membrane croup explainable by the fact that these are different stages of the disease. A difference in degree and not in kind. We desire to limit the exudate, hence the mercury at first, later tincture of iron and whiskey are of more value. All must be isolated.

Dr. Alexander, of Centre county, did not isolate croup, and never knew it to occur in a second case in a family; if this were diphtheria, there ought to have been extension to others.

Dr. J. Aulde, Philadelphia, believed it the same in the local incipiency. He treated it locally and prevented the multiplication of the bacilla and hence the increase of the membrane. The best and a harmless remedy is the peroxide of hydrogen, in spray, gargle and internally. He preferred as mercury the biniodide. Calomel acts on the liver and this is the way it aids in the relief. The biniodide acts better and eliminates the poison.

Dr. Dercum, Philadelphia, regarded them in essence identical. The anatomy of the parts must be studied to understand the difference in appearance.

Dr. Sibbet, Carlisle, believed in the ice treatment.

Dr. Hull objected to loading the blood with alcohol, and especially in children. There was no need of using it.

On motion of Dr. Hiram Corson, the following was adopted:

Whereas, The medical societies of the counties of Berks, Bucks, Bedford, Lehigh, Lycoming, Mifflin, Northampton, Montgomery, Schuylkill, Somerset, Perry, and Westmoreland and perhaps others not yet heard from, have passed resolutions in favor of conferring the entire control and management of our hospitals for the care of the insane, on the Boards of Trustees of these institutions now under the care of superintendents, and of making it incumbent on them to appoint women physicians to have the medical care of the insane of their sex, and

Whereas, This society at its meeting in Pittsburg, in 1890, passed a resolution in favor of the reforms advocated by the county societies, above named, and

Whereas, The marked success of management by trustees in the eastern hospital at Norristown, and the value of female physicians for the female insane have been exemplified grandly in that place with its 2,000 patients, therefore,

Resolved, that a committee be appointed by the president of this society to memorialize the Legislature for the enactment of laws to carry these reforms into effect.

On motion the subject was referred to the Legislative Committee.

On the second day the nominating committee was announced.

Dr. H. C. Wood, Philadelphia, read a paper on

NEUROPATHIC INSANITY IN RELATION TO CRIME.

Religious beliefs often run into insanity. Some are able to control their actions but others knowing they are wrong yet cannot control them. One is reasoning insanity. Some cannot rely on their own integrity. Hysteria is not madness, but a neuropathic state which may end in madness. Dipsomania is a normal attribute, the basis of many cases generally easily controlled. But vice alters the nerve centres and it becomes insanity. If at first such could be controlled by law in an institution, they could be cured. Unfortunately there is no law to do this. You can't reform a nervous criminal. They have no fear of punishment. Society must protect itself, should recognize such and prevent them from breeding their kind. Isolate them for life, or if a change occur in their nerve centres and regain the normal state, then they may be safe. He would destroy all such if necessary.

Dr. Dercum believed drunkenness could be cured by legal restrain. The knowledge that repeated acts of inebriety would bring enduring punishment will act to restrain such people. Temporary imprisonment is useless. The State should have an Inebriate Hospital, and keep such cases till they are well as they do with the insane.

On motion, greetings were sent to the State societies of Iowa, Illinois, North Carolina, Missouri, now in session. These greetings were returned by each body named.

Dr. H. A. Hare read a paper on

THE VALUE OF SOME NEW MEDICAMENTS.

Camphoric acid he had found of value in night sweats from any cause. Given in tablets or capsules, 20 grs. three times a day. 'Piperazene had failed in every instance of rheumatism where he had tried it. Dose 15 grs. in twenty-four hours.

Codeine is not used in diabetes mellitus as much as it should be. One to 3 grs. three times daily, increase slowly till it produces drowsiness, then reduce.

Chroten chloral is a good analgesic in facial neuralgia. 5 to 20 grs. three times daily. It generally acts at once, when the dose can be reduced.

The strontium salts, bromide, phosphate, lactate, are of value. The bromide does not cause the cutaneous eruption as in other bromides. Nor the adverse action on the stomach. Ten to 30 grs. three times a day. The lactate is of considerable value in albumenuria, decreases the albumen but this is apt to return if the remedy is withdrawn. 30 grs. three times a day.

Creosote in pulmonary phthisis, though reports are generally favorable, still often fails. Two drops three times a day increased slowly till the bowels are irritated. He had gone up to 90 and 100 drops. It is contra-indicated when fever occurs. It may be given in capsules but best in milk and gulped down. In chronic bronchitis it is of great advantage, but when the urine becomes smoky discontinue. It generally cures.

(*To be concluded.*)

MISCELLANY.

The Fourteenth Annual Congress of the American Laryngological Association will meet in Boston, Mass., June 20, 21 and 22, 1892.

New Hampshire Medical Society.—One hundred and first anniversary meeting, Monday and Tuesday, June 20 and 21, at Concord.

The Columbian Exposition Medical Department is organized and under the direction of Dr. John E. Owens, address 1806 Michigan Avenue, Chicago.

The Ninth Annual Meeting of the American Climatological Association, will be held at Richfield Springs, N. Y., June 23, 24, and 25, 1892.

The Kings County Medical Association.—The forty-eighth regular meeting of the Association will be held in Wurzler's Building, No. 315 Washington street, third floor, on Tuesday evening, June 14, at half past eight o'clock.

At 9 o'clock Dr. Thomas H. Manley of New York City, will read a paper on "The Therapeutical Value of the Mercurial Salts in General Surgery." J. D. Sullivan, President.

J. C. Bierwirth, Secretary, 137 Montague St.

Medico-Chirurgical College of Philadelphia.—At a special meeting of the Board of Trustees, Dr. W. Frank Haehnlen, Demonstrator of Obstetrics, at the University of Pennsylvania, was elected Professor of Obstetrics; Dr. W. Easterly Ashton, Lecturer on Gynecology at Jefferson Medical College, Professor of Gynecology; Dr. Chas. M. Seltzer, Professor of Hygiene; Dr. H. H. Boom, Adjunct Professor of Chemistry; Dr. B. T. Shimwell, Adjunct Professor of Operative Surgery. E. Laplace, M.D., Secretary.

International Dermatological Congress in Vienna.—The second meeting of the International Dermatological Congress will be held in Vienna from the 5th to the 10th of September, 1892.

Many of the most distinguished representatives of Dermatology and Syphilography from all countries have promised to present papers and the indications are that the meeting will be a great success from a scientific standpoint.

The committee on organization, through the president, Prof. Kapesi, has extended a cordial invitation to the members of the American Dermatological Association and of the New York Dermatological Society and others interested in Dermatology in this country to be present.

The membership fee [five dollars] should be sent with titles of papers intended for presentation to the Secretary for North America, Dr. Prince A. Morrow, 66 West 40th Street, New York or to the Secretary General of the Congress, Dr. Gustav Riehl, Wien 1-20, Bellaria Strasse 12.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from May 28, 1892, to June 10, 1892.

Major Robert M. O'Reilly, Surgeon U. S. A. (Ft. Logan, Col.), is granted leave of absence for fifteen days, to take effect in the early part of next month.

Major David L. Huntington, Surgeon U. S. A., having reported in accordance with Par. 9, S. O. 107, c. s., Hdqrs. of the Army, is assigned to temporary duty in charge of the office of the Medical Director, Hdqrs. Dept. of Arizona, pending the absence of the Medical Director, Col. Jos. R. Smith, Surgeon U. S. A.

First Lieut. Allen M. Smith, Asst. Surgeon, will, upon the return of Capt. Benj. Munday, Asst. Surgeon, to Ft. Sully, S. D., proceed without delay to Ft. Yellowstone, Wyo., and report to the commanding officer for temporary duty with troops in the National Park during the season. Par. 1, S. O. 80, Hdqrs. Dept. of Dak., St. Paul, Minn., May 24, 1892.

Capt. C. N. B. Macaulay, Asst. Surgeon U. S. A., granted leave of absence for three months.

Col. Anthony Heger, Surgeon U. S. A., granted leave of absence for four months, to take effect after June 30, 1892.

The following assignments to duty of Asst. Surgeons U. S. A., recently appointed, are ordered:

First Lieut. Champe C. McCulloch, Jr., will proceed from Charlottesville, Va., to Ft. Sam Houston, Texas, and report in person to the commanding officer of that post for duty.

First Lieut. Frederick P. Reynolds will proceed from Elmira, N. Y., to Ft. Monroe, Va., and report in person to the commanding officer of that post for duty.

First Lieut. Isaac P. Ware will proceed from North Anson, Me., to Ft. Douglas Utah, and report in person to the commanding officer of that post for duty.

First Lieut. Robert S. Woodson, now at Ft. McPherson, Ga., will report in person to the commanding officer of that post for duty.

First Lieut. Madison M. Brewer is relieved from temporary duty in the Surgeon-General's office, Washington, D. C., and will proceed to David's Island, N. Y., and report in person to the commanding officer of that post for duty.

First Lieut. George D. Deshon, now at Columbus Bks., O., will report in person to the commanding officer of that post for duty.

First Lieut. Samuel R. Dunlop, Asst. Surgeon U. S. A., is relieved from duty at Ft. Supply, Ind. Ter., and will report in person to the commanding officer, Camp Pena Colorado, Texas, for duty at that station, relieving Major John O. Skinner, Surgeon U. S. A. Major Skinner, upon being relieved by First Lieut. Dunlop, will rejoin his proper station, Ft. Clark, Texas.

Capt. William B. Davis, Asst. Surgeon, is relieved from duty at Ft. Clark, Texas, to take effect upon the return of Major Skinner to that post, and will report in person to the commanding officer, Ft. Sam Houston, Texas, for duty.

Major Edward B. Moseley, Surgeon, is relieved from duty at Ft. Sam Houston, Texas, to take effect upon the arrival at that post of Capt. Davis, and will report in person to the Attending Surgeon, Washington, D. C., for duty in his office.

Capt. Freeman V. Walker, Asst. Surgeon U. S. A. (Ft. D. A. Russell, Wyo.), is granted leave of absence until June 30 inst., to take effect on arrival at Ft. D. A. Russell of Capt. Julian M. Cabell, Asst. Surgeon U. S. A.

APPOINTMENT.

Major Fred C. Ainsworth, Surgeon, to be chief of the Record and Pension Office of the War Department, with the rank of Colonel, in accordance with the Act of May 9, 1892, to fill an original vacancy. May 27, 1892.

COMMISSION VACATED BY NEW APPOINTMENT.

Col. Fred C. Ainsworth, Chief of the Record and Pension Office, his commission as Surgeon with the rank of Major. June 1, 1892.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Two Weeks Ending June 11, 1892.

Asst. Surgeon E. R. Stitt, detached from Naval Hospital, Philadelphia, and to examination for promotion, and then to Bureau of Medicine and Surgery.

Asst. Surgeon T. B. Bailey, detached from receiving ship "Minnesota," and to examination for promotion, and then to hospital, Philadelphia, Pa.

P. A. Surgeon J. C. Byrnes, ordered to special duty at Norfolk and Portsmouth, Va.

Asst. Surgeon H. D. Wilson, ordered to the receiving ship "Minnesota."

The Journal of the American Medical Association

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ASSOCIATION NEWS.

AMERICAN MEDICAL ASSOCIATION.

Proceedings of the Forty-third Annual Meeting, held in Detroit, Mich., June 7, 8, 9 and 10, 1892.

June 7—First Day—General Session.

The Association convened in the Detroit Opera House, and was called to order at 10 A.M., by the Chairman of the Committee of Arrangements, Dr. H. O. Walker, of Detroit.

Divine blessing was invoked by the Rt. Rev. *Thomas F. Davies*, of Detroit.

Dr. Walker then introduced the Hon. R. A. Alger, of Detroit, who, on rising and advancing to the speaker's stand, was received with an outburst of applause, and when quiet was restored delivered the following

ADDRESS OF WELCOME.

Mr. Chairman, Doctors and Ladies:—I have been invited here through the courtesy of our local committee, to bid you welcome to Detroit and Michigan. The gathering of such a distinguished body of men, men who stand so high in their profession, from every part of this great country of ours, is a great compliment to any city, to any State, and I assure you that you are welcome to the hearts and homes of the people of Detroit, and while you remain among us I trust you may receive that hospitality which we always extend to visitors. I trust that while you are with us your stay may be one of unalloyed pleasure. There are a few things that we ask you to remember. We do not want you to talk about the weather. (Applause.) We are a little sensitive about that in Detroit, and so while we are doing the best we can, have made every sort of prescription that we possibly could imagine to have the weather good, we have not been very successful. We may have to turn it over to you in a body and ask you to take the matter up. I hope, gentlemen, that you may have a season here of pleasure and rest. It may be a great comfort to you, and possibly to your patients (applause), to be thus separated from them while giving them a chance and yourself tak[illegible]st. (Applause.) Now, gentlemen, with your good ladies, if there is anything in Detroit, or you think there is anything here you wish, that you don't see, send for it. If there is anything here you wish that you do see, help yourselves. I assure you that there is a latch key for every one of you, and that you will find a welcome there, wherever you may be, and I wish for you every pleasure during your stay, every happiness as you go to your homes, and that you may long remember your gathering here in Detroit as one of the bright spots in your professional and social life. We hope to see you later socially. We are not ill; we probably shall not send for you professionally; we do not think we will take that risk. (Applause.)

I have been studying somewhat the order of exercises as it has been printed here, wishing half the time I were a doctor and enabled to understand what you are talking about, or going to talk about. Glad you have signed your names to these marvelously worded subjects in plain English. I trust that when we get a report of these lectures, if we are not able to listen to them ourselves, we shall understand them better by and by than we shall by the title. Again I welcome you and say good-morning.

Dr. Walker, at the conclusion of Gen. Alger's address, said: For the third time in the history of the Association the profession of Michigan and of Detroit welcome you. We hope that your visit here will be as pleasant and profitable, socially and scientifically, as it was on the two former occasions when the Association met here. General Alger has welcomed you to the city, and it would be superfluous for me to say anything further. However, I will say that all you have to do is to simply "press the button, and we will try and do the rest." (Applause.)

In reference to the report of the Committee of Arrangements, I do not think I can do anything better than to ask you to read the programme, which I think speaks for itself. I will direct your attention, however, to some entertainments that we purpose giving you while here. For this evening (Tuesday) a reception will be tendered the members and their ladies at the Light Infantry Armory, by the medical profession of Detroit. Wednesday evening there will be receptions to the members at the residences of Hon. H. S. Pingree, Gen. R. A. Alger, Mr. Geo. S. Davis and Mr. Frederick K. Stearns. Thursday, June 9, an excursion on the Detroit River and Lake St. Clair for members and ladies. Lunch served on board the boats.

Mr. President, I have here an emblem of authority, and besides being an emblem of authority, it is of historical interest. It is a gavel made from a portion of Pontiac's historic tree, which was a solemn witness to the bloody reign, July 31, 1673, when Pontiac made his attempt to capture the settlement of Detroit. We know you will use it to advantage, and trust that after the meeting has terminated, you will take it home and treasure it among your archives. (Loud applause.)

Ladies and gentlemen, it affords me great pleasure to now introduce to you the President of the American Medical Association, Dr. Henry O. Marcy, of Boston.

Dr. Marcy was received with loud and prolonged applause. He acknowledged the token of power and interesting souvenir presented to him by Dr. Walker in a few well chosen words.

The second Vice-President, Dr. Henry Palmer, of Janesville, Wis., then took the chair, and President Marcy delivered his Annual Address. He selected for his subject "Evolution in Medicine."

The address was listened to with marked attention.

President Marcy's delivery was clear, weighty and emphatic, his utterances being punctuated here and there with round after round of applause.

Vice-President Palmer: You have listened to the President's address, and it is before you for action. What is your pleasure?

On motion the address was referred to the Committee on Publication.

Dr. J. B. Murdoch, of Pittsburgh, Pa., moved that a vote of thanks be extended to the President for his able and eloquent address. The motion was seconded and carried.

Dr. Albert L. Gihon, New York City: In moving that that part of the President's address referring to deceased members be referred to a special committee, or to the Committee on Publication, in order that resolutions of condolence may be prepared, I desire to add another name. Those of us who have been in the habit of attending the meetings of this Association for twenty years or more have missed the genial face of one of its oldest members; of one who was one of the most enthusiastic and earnest of its friends; of one who, had he been here to-day, in the city of his residence and life work, would have been the most hospitable of the hosts. I refer to my esteemed, beloved and honored friend, Dr. William Brodie, of Detroit. (Applause.)

I move, Mr. President, that the committee to whom may be entrusted the preparation of resolutions of condolence, be instructed to express to the family of the late Professor William Brodie, an ex-President of this Association, our sentiments of regret of his absence at this time, and of our inestimable loss in his untimely death.

Seconded and carried.

President Marcy then introduced Dr. John L. Bray, of Chatham, Ont., President of the Canadian Medical Association.

Dr. Bray was received with applause. He said: Mr. President and Members of the American Medical Association, I thank you for your kind invitation to attend this meeting, and in behalf of the Canadian Medical Association I extend to you a cordial invitation to our next meeting, to be held in the city of Ottawa, on the 23d of September. We shall be pleased to see as many of you as will honor us with your presence. (Applause.)

On motion, the following gentlemen were made members by invitation: Drs. Bruce Smith, of Ontario; James Farley, of London, England; and Professor Joseph Remington, of Philadelphia, delegate from the American Pharmaceutical Association.

President Marcy invited all Vice-Presidents present to take seats on the platform, and those that responded were Drs. W. E. B. Davis, Willis P. King and Henry Palmer.

The President called for the report of the Treasurer.

The Treasurer, Dr. R. J. Dunglison, of Philadelphia, being absent, the report was passed temporarily.

The next thing in order was the report of the Permanent Secretary, Dr. William B. Atkinson, of Philadelphia, which was then read. (No report received.)

Dr. Dudley S. Reynolds, Louisville: Mr. President, I wish to ask for information. I am under the impression, as doubtless many others are, that all organizations of the regular medical profession adopting the code of ethics of this body are entitled to send delegates here. I wish to correct the misapprehension under which the Permanent Secretary labors in his report concerning the State Medical Society of Kentucky. It has provided among its qualifications for membership in that body, that such local, county, or district medical society within that State as adopt the code of ethics of the American Medical Association may send one delegate for every ten of their own members to the State Medical Association.

Secretary Atkinson: I have not received a list from Dr. Steele Bailey, Secretary of the Kentucky State Medical Society, therefore I was unable to know whether it recommended delegates of the local society. I am glad to have the correction made.

Dr. Reynolds: One additional qualification. The Kentucky State Medical Society disqualifies its members from continuing as such whenever they are in unfavorable standing in any one of the local societies, and it provides that any physician living in a town, district or county where a local society exists, adopting the code of ethics of this Association, shall be eligible to membership in the State Medical Society. The same is true of the Mississippi Valley Medical Association.

Secretary Atkinson: The Mississippi Valley Medical Association does not come under this law.

The law on this point was called for and read by the secretary.

Dr. Robert Newman, of New York, then moved that the report of the Secretary be received, referred to the Judicial Council, and the decision announced to the Association.

Seconded and carried.

At this juncture, the First Vice-President, Dr. Willis P. King, of Kansas City, took the chair.

The report of the Committee on Sections was called for, and was read by the chairman, Dr. John S. Marshall, of Chicago, as follows:

REPORT OF THE COMMITTEE ON SECTIONS.

At the last meeting of the American Medical Association, the Chairman of the Section of Dermatology reported that he had been unable to secure sufficient attendance to warrant the calling of his Section together. He therefore moved that it be abolished.

This announcement brought the Association face to face with a serious problem. The life of an important Section was in peril, and an examination of the program showed that others were in a similar state of atrophy. A committee of two from each Section was appointed to investigate the causes for this state of affairs, and suggest adequate remedies.

Your committee were unanimously of the opinion that the future usefulness and growth of this great organization depends largely upon the value and scientific character of the work done in the Sections. Much has been done in the past that was creditable, but it is a regretable fact that these bodies have not achieved the commanding position in American medicine which they should occupy. The question naturally arises, can the growth of the Sections be encouraged and if so, by what means?

When this Association was first formed, scientific medicine was in its infancy. At that time conventions were the fashion, and all large organizations took this form, and it was but natural that the Association should be cast in the mould of the day. Since that time there has been an enormous specialization in the practice and teaching of our profession, and in addition the Association has grown from a few hundreds to several thousands so that your committee are of the opinion that some changes are necessary to bring the organization in accord with the altered conditions. Like all large bodies the Association has moved slowly in recognizing these changes. In this way encouraging the formation of special national societies, which have, to a great extent, taken the place which should have been filled by the various Sections of this great body. We believe that with proper fostering the Sections may take the commanding position which they should occupy and with this change we feel will come a large augmentation in our membership, when it shall number, not seven thousand, but forty thousand, and when it shall include the majority of all the honest and honorable practitioners of medicine in America.

We are convinced that the Association has it in its power to furnish every intelligent worker in the profession the advantages for work in its Sections greater than any isolated special society can offer, and we believe that a large majority of the members of this Association are ready and willing to adopt such measures as will clearly present these advantages.

With these views it remained therefore for your committee to ascertain what, if any, changes were needed to increase the effective work of the Sections. Accordingly a series of questions were prepared and sent to the members of the committee, with a request for a detailed answer to each one. It is not necessary to read those answers in full, the more important of them were:

Should the Sections occupy a more commanding place in the conduct of the affairs of the Association?

Do they need an Executive Committee, and if so, should such committees form a general business committee to consider all matters not now referred to any of the existing committees?

Should the Sections have more time for the reading and discussion of papers?

To all of these questions a unanimous affirmative reply was received.

It was apparent that if more time was needed for Section work, it could be obtained in but two ways: either the meetings must be lengthened to five or six days, or the time given to the General Sessions must be shortened. The former did not seem to be advisable; the latter was only possible by the creation of a General Business Committee to take charge of the business matters now discussed at great length in the general body. It was hoped by this means to lessen the length of the general daily sessions to one hour, or to one hour and a half, with a corresponding addition to the length of the sessions of the Sections

Your committee felt that in having this Business Committee composed of the retiring chairman of each Section, it would be constantly recruited from men who were most familiar with the needs of the Sections, and in having them hold office for three years, permanence, stability and precision would be given to the conduct of the affairs of the Association.

Accordingly, your committee has formulated an amendment which it is proposed to offer as a substitute for the amendment proposed by Dr. Culbertson at the last meeting.

"That each Section of this Association shall elect an Executive Committee of three members, who shall be chosen from among those who have been in attendance upon the sessions of the Section for at least two years; to serve one, two, and three years respectively; and that thereafter the retiring Chairman of the Section shall take the place upon the Executive Committee of the retiring member of the Committee. It shall be the duty of the Executive Committee, in conjunction with the Chairman and Secretary, to give especial attention to the interests of their own Section.

"These Executive Committees of the Sections so formed shall constitute the General Business Committee of the Association. They shall hold daily meetings during the sessions of the Association, and all matters of business not provided for by the Committee of Arrangements, the Board of Trustees, the Judicial Council, the Committee of American Medical Necrology and Special Committees shall be referred to them without debate.

"It shall be the duty of the General Business Committee to give especial attention to the interests of the Association, and to promote the welfare of the various Sections; to consider all matters of business referred to it by the Association and report upon them at the earliest possible moment, when the Association may adopt or reject the report as it may deem best.

"It shall be the further duty of the General Business Committee to make and present the nominations for the Officers of the Association and its Standing Committees and recommend the time and place for the meeting of the Association.

"That the present numerical designation of the Section of the Constitution entitled, "Provision for Amendment" be changed by striking out the Roman Numerals 'VII' and substituting therefor 'VIII.'

"All Sections or parts of Sections of the Constitution or By-Laws of the Association not in harmony with this amendment are hereby repealed."

In conclusion your committee desires to state that it has most carefully considered the matters herewith proposed. While they were practically unanimous, no hasty action was taken, but numerous meetings were held, and much correspondence conducted with the hope that its labors may prove useful to the Association, which means that it is for the good of our profession.

This report is respectfully submitted.

JOHN S. MARSHALL, *Chairman.*

HAROLD N. MOYER, *Secretary.*

Dr. N. S. Davis, of Chicago, moved that the report be received. Seconded and carried.

The President then stated that a motion to reject or adopt the report, as a whole, would be in order.

After considerable discussion, participated in by Doctors Woodbury, of Philadelphia, Rayburn, of Washington, C. A. L. Reed, of Cincinnati, R. Harvey Reed, of Mansfield, A. E. Baldwin, Chicago, H. A. Hare, of Philadelphia, N. S. Davis, of Chicago, John S. Marshall, of Chicago, and Dudley S. Reynolds, of Kentucky, the report, on motion, was adopted with the exception of paragraph four, relating to nominations for officers of the Association, which, on motion of Doctor Hampton of Kentucky, was stricken out.

Secretary Atkinson then read the report of the Special Committee on the creation of a Department and a Secretary of Public Health, as follows:

REPORT OF THE SPECIAL COMMITTEE APPOINTED TO PETITION CONGRESS TO CREATE A DEPARTMENT AND A SECRETARY OF PUBLIC HEALTH.

Mr. President:—The undersigned, appointed at the last meeting, to memorialize Congress on the subject of a department and a Secretary of Public Health in the Executive Department at Washington, beg leave to report progress in their undertaking.

Soon after the adjournment of the last meeting, your Committee began to consider the form and terms of the petition to Congress, which should set forth as briefly as possible, the great importance to the public welfare of a central office of public health and a medical secretary of the same, on the same plane of rank and dignity as is accorded to the other departments in the general administration of public affairs.

The wide separation of the members of your Committee made it difficult to obtain the views of the eminent men who compose it and give such uniformity to them, as would give general satisfaction; but the copy of the Petition, which accompanies this report, was at length assented to by all.

This Petition, to the extent of eight thousand copies, was printed in pamphlet form and issued within the covers of The Journal of the Association. A large number have been sent out at the request of State Boards of Health, and others, and a sufficient number placed in the hands of Members of Congress. Copies have, also, been sent to all the medical schools of the Union. *A large number of favorable responses* have been received from physicians in the States, East, West, North and South, from some of our eminent schools of learning, and from State Boards of Health everywhere.

The Petition, with a bill formed to carry out its purposes, was presented in the first week of the session of Congress; in the Senate by the Hon. John Sherman, and in the House of Representatives by the Hon. John A. Caldwell, both of whom have expressed warmly their belief, that the measure is one of great public importance, and that they would do all they can to secure its adoption.

Copies of the Petition and the bill to establish the Department of Public Health and a Cabinet Secretary thereof accompany this report.

At the suggestions of the Members of Congress, the Chairman went to Washington, during the last days of January, and he was invited to meet the Committees of both Houses for a conference on the subject. The Petition and bill had been referred to the Committee on Contagious and Infectious Diseases of the Senate and to the Judiciary Committee of the House. I had a full and courteous hearing in both Committees and I believed that in the House Committee, a favorable impression was made; but in the Senate Committee I found the Chairman quite unfavorable to it, because, and he gave no other reason to me, the present Congress would do nothing that would increase departmental expenditures. I did not understand that, personally, he had any objections to the movement.

Before both of these Committees, your Chairman declared that the medical profession had nothing to ask of Congress for its own aggrandizement, but simply pleads for the welfare of the people, with whose social state it is more intimately acquainted than any other class of citizens—that our knowledge applies to everything connected with their employments, well-being, their habitations, and that while the fearful yet preventable diseases which rage in their families give us large revenues. the obligations of our beneficient profession lead us just as earnestly to attempt to destroy the causes of sickness as to save them from its destruction.

Your Chairman called their attention to the recital in the preamble of the National Constitution, namely: that its object is, to form a more perfect union of the United States, for the establishment of justice, to insure domestic tranquility, to provide for the common defense of the people and promote the general welfare; and he asked if Congress is not therefore under the highest obligations, while promoting domestic tranquility and the common welfare, to provide every means required by the medical profession to prevent the spread and to destroy the elements of contagious diseases, that while the most lavish outlays are being made for the construction of the implements of war to defend our commerce and our coasts, why shall it not organize a comparatively inexpensive department in the Government that will be able to give aid by concerted action with the State Boards of Health, for the detection and destruction of the germs of deadly diseases that infest the air, waters and food not only of our coasts, but in every city, town, and in the single homes of the agricultural classes. And he further said that what each Member of Congress must feel for the increased intelligence and success of the physician, to whom he *intrusted his own health and that of his family, is a* type of the mind of the millions of individuals and families that constitute the Republic.

Your Chairman dwelt at some length, on the wide and practical learning of physicians which should commend them to the esteem and confidence of the honorable gentlemen of the legal profession, who make, judge and execute the laws of the land. He pointed out that the methods of investigation of diseased conditions were upon the same logical plane as are the most difficult problems in law, statesmanship or engineering science—that it is a profession of applied science and the opinions of medical men have all the validity and certainty of those in any of the practical pursuits of life; that our contributions to mental science have done more to unravel the occult questions in psychology than all the work of the schoolmen for the past generation—that we have shown that metaphysics is no longer a jugglery with words but the highest expression of reason whereby the consciousness is able to free itself from the evil influences of illusions, hallucinations and delusions; that the supreme condition of moral and intellectual freedom exists only in a healthy condition of the brain, which proves that the supervision of the mind appertains wholly to the medical profession.

Upon the return of your Chairman to Cincinnati, he found published in a medical journal a bill which had been introduced and referred to the Committee on Contagious and Infectious Diseases. This bill, a copy of which accompanies this report, proposes to establish a National Board of Health, in the Treasury Department and under the supervision of the Secretary of the Treasury, which is to consist of seven members, as follows: three scientists, at $5,000 each, salary; from the medical staff of the army, navy, Marine-Hospital Service, one member each; and one from the legal department. So far as quarantine and quarantine regulations are concerned, it contains nothing but what may be found in the prescriptions of the bill which your Committee introduced into Congress; otherwise there are no provisions for the collection of statistics of natality, morbility, mortality, or of the prevalence of endemics or epidemics, or for collective investigations in regard to febrile, inflammatory, degenerative or malignant diseases; and diseases of special organs, *i. e.*, the heart, kidneys and brain.

Your Chairman, after reading this bill, at once addressed the Chairman of the Senate an earnest, yet courteous, remonstrance against the passage of his bill; because it was not calculated to further the just claims of the medical profession to be represented in the executive government, that it was impossible for the Secretary of the Treasury to intelligently supervise the medical and sanitary interests of the seaports, and cities and towns, and agricultural regions of the Nation; that we are and always have been deficient in a national organization that could combine the efforts of State Boards of Health to promote the health and comfort of the people at large, hence we have no standing in the International Congresses on Demography and Hygiene, that are so imposing and beneficial to public health and comfort in countries of advanced civilization; for example, in the World's Congress held with such *eclat* in London last July, the United States had no official representation. The distinguished President of that Congress, Sir Joseph Fahrer, said that though they had accomplished so much good in preventive medicine in England, yet they could have done more if they had had a Secretary of Public Health in the government. They intend to get one.

Moreover, that there were no suggestions in his bill that would give any encouragement to higher medical education for which the medical profession asked no subvention from Congress—simply the creation of a great central office that incidentally would promote a concerted and loftier aim amongst the more than one hundred Schools of Medicine now operating amongst the States. Your Chairman laid before him the more recent statistics of success in the departments of surgery and midwifery, more especially, which show that in maternity hospitals in our country and in Europe women in successive hundreds and thousands of instances give birth to children in complete safety. I also pointed out that in expenditures his bill would be more costly than ours. After a long delay the distinguished Senator simply answered to the effect that Congress would not pass our bill, he felt very sure—indeed his Committee will not report it.

Since then, as late as the 24th of March, the Senator has introduced another bill in which he abandons his National Board of Health scheme, which was to contain seven members, and commits to the Marine Hospital Service, under the supervision of the Secretary of the Treasury, the administration of a coast quarantine and of that which relates to inter-state commerce during a pestilence brought from foreign lands.

Your Committee entertains most favorable opinions in regard to the activity and intelligence which has been displayed by the Marine-Hospital Service for the preservation of our seaports from epidemics of foreign origin, and also for its quarantine regulations to prevent their transmission from State to State along our lines of commerce; but it does not seem reasonable that all the benign measures of preventive medicine should be administered by a single organization whose functions relate to so limited a field; besides, all that has been or can be accomplished by that special service is provided for in the proposed bill to establish a department of public health.

The most untenable ground held by some who oppose our bill is that Congress has no power to establish a department of public health.

As before said, in the preamble of the Constitution, it is expressly stated that the Constitution is created to form a more perfect union of the States, to establish justice, insure domestic tranquility, provide for a common defense and promote the general welfare.

In promoting public health do we not promote the general welfare? What is the first law in political governments? The answer comes down to us through all the ages of civilization; the health of the people is the first law; "*salus populi suprema lex*."

More than 100,000 people are dying a year by consumption, and 400,000 more of other preventable diseases. What is all the slaughter of armies compared to this?

There is another objection to our bill which comes from some conservative members of our profession; that the creation of such a department and a Cabinet Secretary will expose us to the operation of low and disqualified political schemers in our profession. Can we not trust the President to appoint a competent physician in the formation of his Cabinet? Why should we think it impossible to find a competent head of such a department any more than competent men are found for control of other departments? Such an object is without reason.

C. G. Comegys,
Chairman.

In conclusion we offer for your adoption the following resolutions:

Resolved, That the Committee be continued with such additional members as shall represent all the States in this appeal to Congress to establish a department and a Secretary of Public Health.

Resolved, That physicians in every congressional district throughout the States be requested to urge the adoption of this measure upon their Senators and Representatives in Congress.

Dr. Scott, of Ohio, moved that the report be received. Carried.

Dr. Sutter, of New York, moved that the report and resolutions be referred to the Section on State Medicine for discussion and deliberation and for further report to the Association. Seconded.

Dr. H. B. Hemenway, of Illinois, moved, as a substitute, that the report of the Committee be adopted. Seconded.

Dr. Sutter stated that he made his motion to refer the report to the Section on State Medicine to save time, as he was satisfied that the report would receive considerable discussion which would doubtless be unnecessarily prolonged and consume the valuable time of the General Session, while, in the Section on State Medicine, it would be discussed thoroughly by those men who had given particular attention to the subject. He thought it would be advantageous to the Association if his motion prevailed.

Dr. Comegys very much regretted that the gentleman from New York had made such a motion. It seemed unnecessary to delay the action of the Association on this, one of the most important subjects that could be brought before it, and no physician of intelligence believes that medicine is not one of the most important questions pertaining to the public welfare. Does any intelligent [illegible] believe that we will not need a central offic[illegible] and a Secretary of Public Health, a man who will represent not only our interests, but those of the public at large? He hoped that the doctor would withdraw his motion.

Dr. Bell, of New York, fully coincided with Dr. Comegys, the Chairman of the Committee. It was a report, that, in his opinion, demanded the careful consideration of every member present. He therefore hoped that the matter would be disposed of promptly, and without unnecessary discussion.

The President then put the substitute as offered by Dr. Hemenway, which was carried and the report adopted.

The following is a copy of the Bill introduced in the House of Representatives by Mr. Caldwell, entitled:

A BILL TO ESTABLISH A DEPARTMENT OF PUBLIC HEALTH.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be established a Department of Public Health. There shall be appointed from civil life by the President, by and with the advice and consent of the Senate, a Medical Secretary of Public Health, who shall be intrusted with the management of the Department herein established. He shall be paid an annual salary of ———. He shall, with the approval of the President, provide suitable offices for the Department, and shall employ such assistants and clerks as may be necessary.

Sec. 2. That it shall be the duty of the Department of State to obtain from consular officers at foreign ports and places all available information in regard to sanitary conditions of such ports and places, and transmit the same to the Department of Public Health; and the Secretary of Public Health shall also obtain, through all sources accessible, including State and municipal authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish and transmit to the medical officers of the Marine-Hospital Service, to collectors of customs, and to State and municipal health officers and authorities, weekly abstracts of the consular sanitary reports and other pertinent information received by said Department. The said Department also shall, as far as it may be able, by means of the voluntary coöperation of State and municipal authorities, of various general and special hospitals and sanitariums, of public associations, and of private persons, procure and tabulate statistics relating to marriages, births, deaths, the existence of epidemic, endemic and other diseases, especially those of a degenerative character, such as malignant growths and affections of the circulatory, respiratory, secretory and reproductive organs, and data concerning the fruit of consanguineous marriage and transmissibility of insane, alcoholic, syphilitic, nervous and malignant types of constitution. He shall also procure information relating to climatic and other conditions affecting public health, especially in reference to the most favorable regions in the United States for the cure or relief of the chronic diseases of the several organs of the body, especially of consumption. He shall also obtain information in a sanitary point of view of the health and comfort of the laboring classes. He shall seek through the State Boards of Health information in regard to the healthiness and comfort of public schoolhouses. He shall, so far as he can, further collective investigations in regard to the common diseases of an inflammatory and febrile character that prevail among the people. He shall coöperate with State Boards of Health, the Signal Service, the Medical Departments of the Army, Navy and Marine-Hospital Service, and unify and utilize their work so as to make the Department of Public Health a repository of the most important sanitary facts that concern the public comfort. Besides the reports of the state of public health, which he shall report from time to time, the Secretary of Public Health shall make an annual report to Congress, with such recommendations as he may deem important to the public interests; and said report, if ordered printed by Congress, shall be done under the direction of the Department. The necessary printing of the Department shall be done at the Government Printing Office, upon the requisition of the Secretary of Public Health, in the same manner and subject to the same provisions as that of other public printing for the several departments of the Government.

Sec. 3. That the Medical Secretary of Public Health shall frame rules, under the direction of the President, which shall serve for the instruction of consular officers of the United States and of the medical officers serving at any foreign port. In compliance with these rules every master of a vessel destined for a port of the United States shall be furnished with a certificate containing a detailed statement of the inspection of the vessel, cargo, crew and passengers, and of the sanitary measures carried out, at the expense of the vessel; or, if such measures are not carried out, instant warning shall be transmitted to the Medical Secretary of Public Health, who shall immediately notify the quarantine authorities of the port of destination.

Sec. 4. That the Medical Secretary of Public Health shall make investigation, both in the United States and, if necessary, in foreign countries, into the nature, origin and prevention of contagious and epidemic diseases, as well as the cause and conditions of particular outbreaks in disease in the United States, and shall publish and distribute documents relating to the prevention of disease.

Sec. 5. That the President is authorized, when requested by the Medical Secretary of Public Health, and when the same can be done without prejudice to the public service, to detail officers from the several Departments of the Government for temporary duty, to act under the said Department of Public Health to carry out the provisions of this Act, and such officers shall receive no additional compensation, except for actual and necessary expenses incurred in the performance of such duties. When a detail of such officers cannot be made, the Medical Secretary of Public Health, approved by the President, may employ such experts, and for such time and in such manner as the funds at the disposal of the Department may warrant.

Sec. 6. That to defray the expenses incurred in carrying out the provisions of this Act, the sum of ——— dollars, or so much thereof as may be necessary, is hereby appropriated, to be disbursed, with the approval of the President, under the direction of the said Secretary of the Department. That this Act shall take effect sixty days after its passage, within which time the Medical Secretary of Public Health shall be appointed.

Sec. 7. That an Act entitled "An Act to prevent the introduction of contagious and infective diseases in the United States and to establish a National Board of Health," approved March 3, 1879, and all other acts and parts of acts conflicting with the provisions of this Act, are hereby repealed.

On motion, the Association adjourned until Wednesday, 11 A.M.

June 8—Second General Session.

The Association was called to order at 11 A. M., by President Marcy.

Dr. Walker announced the receptions for the evening.

Dr. Henry D. Holton, of Brattleboro, Vt., offered the following resolution, which was adopted:

Resolved, That the President is hereby requested to appoint a committee of five to whom the Code of Ethics of this Association shall be referred for such changes or amendments as they may deem it wise to recommend, if they should decide that any change is required.

A copy of their report shall be delivered to the President and sent The Journal for publication not later than the last issue in March, 1893.

This report shall be presented to this Association at the General Session on the second day of the Annual Meeting in 1893.

The report of the Judicial Council was then read by the Secretary, as follows:

REPORT OF THE JUDICIAL COUNCIL IN REGARD TO THE CASE OF DR. WM. W. POTTER.

After careful and full consideration of the question of the validity of the membership of Dr. Wm. W. Potter in the American Medical Association, the Judicial Council decided that the Medical Society of Erie Co., N. Y., has not complied with the Constitution and By-Laws of the Association and is therefore not entitled to representation by delegates in this body; and that when the New York State Medical Society withdrew from affiliation with the American Medical Association by abolishing its Code of Ethics, Dr. Wm. H. Potter by adhering to and sustaining said Medical Society of the State of New York after that withdrawal *lost* his right to membership in the American Medical Association.

N. S. DAVIS, *President.*

JAS. F. HIBBERD, *Secretary.*

Dr. Dudley S. Reynolds moved that the report be laid on the table. No second.

Dr. N. S. Davis said that the Constitution distinctly states that the action of the Judicial Council is final, and any motions concerning the report were out of order.

Dr. Reynolds said that it was absolutely necessary for the preservation of the integrity of the Association, that we should have some standard by which our rights to membership shall be maintained and demanded. He therefore moved that the report be referred back to Judicial Council for reconsideration, with instructions to specify what part of the organic law Dr. William W. Potter had violated that he should be deprived of membership.

The Chair said that he desired to interrupt Dr. Reynolds as he considered him to be out of order. If it was the decision of the Association to take exception to the ruling of its Presiding officer it could do so, but he would decline to entertain the motion made by Dr. Reynolds of Kentucky, to refer the report back to the Judicial Council.

Dr. Reynolds thereupon appealed from the decision of the Chair and insisted that the Association had the right to refer a report back to the Judicial Council for subsequent report, that he considered this a point of order. (Here the excitement was so intense and the discussions so heated that we deem it prudent to omit them.)

Dr. Davis then stated that the whole business was out of order, and that if the Association was going to vote on it he would insist on the roll-call, and of course only delegates and those who had registered could vote.

The President asked whether or not the roll should be called upon the point of order that had been raised by Dr. Reynolds, of Kentucky; if it demanded it, he would ask the Secretary to call the roll. (Cries of "no, no.") The President then said, "Shall the Chair be sustained in his ruling? Upon that he asks a rising vote." The Chair was sustained amid great applause.

Dr. C. A. L. Reed, of Cincinnati, then read the report of the Committee on the Pan-American Medical Congress, in which he reported progress, stating that the outlook was encouraging.

The Senate of the United States had unanimously passed the following, introduced by the Hon. John Sherman:

"Joint resolution: To authorize the President to invite certain Governments to send delegates to the Pan-American Medical Congress.

"*Resolved*, By the Senate and the House of Representatives of the United States of America, in Congress assembled, that the President of the United States be and he is hereby authorized and requested to invite the several Governments of the Republics of Mexico, Central and South America, Hayti, San Domingo and the Kingdom of Hawaii, to send official delegates to the meeting of the Pan-American Medical Congress to be held in the City of Washington, September 5, 6, 7 and 8, 1893."

Secretary Atkinson announced the Committee on Nominations.

On motion, Drs. Felix Formento and W. J. Mayhew were made members by invitation.

Under the head of "Miscellaneous Business," Dr. Vander Veer, of New York, rose to a question of privilege. With all fairness and good feeling he desired to ascertain the standing of the gentlemen who came from the Medical Society of the State of New York and had been made permanent members of the Association. He hoped that some action would be taken with regard to bringing about a reconciliation.

Dr. N. S. Davis said that all questions of personal standing must be referred to the Judicial Council without debate, and that if propositions were put in writing they would be referred to the Judicial Council.

Dr. C. A. L. Reed, of Cincinnati, moved that the matter be referred to the Committee on Revision of the Code of Ethics, to report some time during the meeting, if possible. Seconded.

Dr. H. B. Hemenway, of Illinois, rose to a point of order and said the motion of Dr. Reed was in opposition to the By-Laws; that all such matters should be referred to the Judicial Council. He offered as a substitute that the matter be referred to the Judicial Council, and that they report to the Association the status of the relationship of the permanent members of the Association. Seconded.

Dr. Gihon moved to amend the substitute by adding "and that they report to-morrow morning."

Dr. Hemenway accepted the amendment.

Dr. C. A. L. Reed said in support of his original motion, that he made the proposition simply in accordance with the suggestion of Dr. Davis, who, he said, is never wrong on parliamentary usages. He had no doubt that the Judicial Council would be pleased to have a "side-light" in the matter which they had been considering in connection with the case under discussion. He hoped that the substitute would not prevail.

Dr. Roberts, of Pennsylvania, inquired as to the *personnel* of the committee; he did not desire to vote to refer it to a committee of which he did not know the composition.

Dr. Willis P. King, of Kansas City, moved as a substitute for the substitute, the following:

That a Committee of five be appointed by the President of this Association, who shall be instructed to meet with a like number from the State Medical Society of New York, for the purpose of adjusting all questions of eligibility of members of said New York State Medical Society to membership in the Association, said committee to report at the next annual meeting of this Association.

Seconded by Dr. Reynolds.

Dr. Reed, as mover of the original motion, accepted the substitute of Dr. King.

After further discussion, Dr. Gihon offered the following amendment to Dr. King's resolution, which was accepted by the latter:

Resolved, That pending the investigation and report by the proposed committee as to the status of Drs. Potter, Vander Veer and the permanent members of this Association, their registration and signature to the certificate presented to them, shall be considered *prima facie* evidence of their standing and qualification for all the rights and privileges of permanent members.

The resolution of Dr. King, as amended by Dr. Gihon, was put by the President and carried amid great applause.

The regular order was then called for. The President introduced Dr. John B. Hamilton, of Chicago, who delivered the general address on surgery. He chose for his subject the "General Principles of the Surgery of the Human Brain and its Envelopes."

At the conclusion of the address Dr. Hamilton was given a vote of thanks, and the address on motion was referred to the Committee on Publication.

The Association then adjourned until Thursday, 11 A.M.

June 9.—Third General Session.

The Association met at 11 A.M., and was called to order by the President.

Dr. Charles H. Thomas, of Philadelphia, called for the reading of the resolutions recently adopted by the Medical Society of the State of Pennsylvania. The Secretary then read the resolutions as follows:

Resolved, That the Medical Society of the State of Pennsylvania hereby expresses its highest disapprobation of the practice of giving certificates or testimonials to secret preparations alleged to be of medicinal virtue, and calls the attention of the affiliated county societies to the fact that such action on the part of members of the said societies is in derogation of the dignity of the profession, and in violation of the letter and the spirit of the Code of Ethics of the American Medical Association and of this Society.

Resolved, That this Society likewise expresses its disapprobation of the practice of inserting advertisements of secret preparations in the columns of medical journals, such action being an insult to the intelligence of the profession, and a degradation of journals indulging therein to the level of the patent-medicine almanac. Especially to be condemned is the action of The Journal of the American Medical Association in admitting such advertisements.

Resolved, That copies of these resolutions, duly attested by the Permanent Secretary, be sent to all county societies in affiliation with this Society, to the American Medical Association, to State medical societies in affiliation therewith, and to the publishers and editors of American medical journals. W. B. Atkinson, *Permanent Secretary.*

Dr. Thomas then offered the following:

Resolved, That the attention of the Trustees of The Journal of the American Medical Association be directed to the fact that the Code of Ethics prohibits all commendatory mention or advertisement of secret preparations, and that said trustees are hereby instructed to respect said prohibition in the future conduct of the official journal of this Association.

On motion the resolutions were adopted as read.

President Marcy introduced Dr. William Pepper, of Philadelphia, President of the Pan-American Medical Congress. Dr. Pepper was cordially received. He called attention to the importance of the Congress, saying that it would establish a general standard for medical practice.

"Closer and closer personal relations, and more and more reciprocity with the countries of the Western Hemisphere," he said, "will be productive of much good. There are great questions of sanitation and other matters pertaining to public health which can best be solved by a free interchange of opinion. It is fit and proper that I should speak of this matter to you, as this Association is the originator of the Congress. I do not wish to take any of your time, and will only express the hope that the Congress will be so conducted as to promote medical education and the advancement of science and facilitate measures for the prevention of disease."

Dr. C. A. L. Reed, of Cincinnati, offered the following resolution, which was unanimously adopted:

Resolved, That the thanks of the American Medical Association be and they are hereby extended to the Hon. John Sherman, United States Senator for Ohio, and to the Senate Committee on foreign relations for their services in securing the adoption of the Senate Bill (number 76) authorizing and requesting the President to extend an invitation to the Governments of the Western Hemisphere to send delegates to the Pan-American Medical Congress, and that concurrence in this resolution is hereby invoked at the hands of the House of Representatives and of the President of the United States.

President Marcy announced the following committee on Revision of the Code of Ethics: Dr. H. D. Holton, *Chairman*, Vt.; Drs. H. D. Didama, N. Y.; Leartus Connor, Mich.; Daniel E. Nelson, Tenn.; Benjamin Lee, Penn.

Committee to confer with a committee from New York State Medical Society, and from the New York State Medical Association: Dr. N. S. Davis, *Chairman*, Ill.; Drs. J. H. Rauch, Ill.; W. T. Briggs, Tenn.; Dudley S. Reynolds, Ky.; Willis P. King, Missouri.

The report of the Treasurer was then called for, and was read by the Secretary as follows:

REPORT OF THE TREASURER.

The Treasurer has the honor to report that the balance in the treasury is $3,076.48. The details of receipts and expenditures will be duly set forth in the columns of The Journal of the Association. Immediately after the last annual meeting, the Local Committee of Arrangements at Washington generously donated towards the payment of the Association's own expenses for printing, rental, etc., $300. The Treasurer has a number of applications for membership, particularly from members of New York County Medical Associations, which cannot be acted upon by him until their status is more definitely determined towards the Association, either by a more liberal construction of existing rules or by a modification or enlargement of them to meet such cases. All of which is respectfully submitted.

June 8, 1882. Richard J. Dunglison, *Treasurer.*

On motion the report was adopted.

REPORT OF THE LIBRARIAN OF THE AMERICAN MEDICAL ASSOCIATION.

To the Officers and Members of the American Medical Association. Your Librarian would respectfully report as follows:

During the year just closed, I have received twelve hundred journals, reports, pamphlets, etc.

About twenty-four years ago, when there were no large medical libraries in Washington and when it was expected that the American Medical Association would probably have a permanent home there, Doctor Toner of Washington, was instrumental in organizing the Library of the American Medical Association for the purpose of collecting books, journals, etc.; to be a safe depository for even the perishable literature of medicine, to be a library of reference for the members of the medical profession and to be a library in fact, as well as in name.

For a period of twenty-four years the books, reports, journals etc., have been accumulating, and have been tied up in bundles and placed in the garret of the Smithsonian Institution at Washington, and at no time in the history of the library has it been accessible; at no time has any part been utilized by the members of the American Medical Association or the medical fraternity. In view of the foregoing, your Librarian recently had an interview with the trustees of the Newberry Library, at Chicago.

At that interview, and more recently in writing, the trustees of said Newberry Library agreed that, if the American Medical Association shall decide to place its books, journals, etc., in the Medical Department of the Newberry Library, the trustees of said Library, agree to pay for transportation, receive, arrange, catalogue, bind and make them readily accessible to the entire profession, whether resident or non-resident of Chicago. Such books, journals, etc., to be held in trust until called for by the Association.

In view of the foregoing, your Librarian would respectfully recommend:

1. That the Librarian be authorized to deposit with the trustees of the Newberry Library, journals, pamphlets, reports and all matter constituting the Library of the American Medical Association, for its Medical Department, to be held in trust by said trustees until called for by the American Medical Association.

Provided, the said trustees of the Newberry Library, pay for transportation, receive, receipt for, arrange, bind and catalogue said books, etc., they to be plainly stamped as the property of the American Medical Association, and that they be made accessible for reference to the entire medical profession: that in future and until some other arrangement be made the books, journals, reports, etc., to be deposited with the Medical Department of the Newberry Library as fast as received, and that the Librarian of the Medical Department of the Newberry Library shall at each and every annual meeting of the American Medical Association, report to the Librarian the number of books, journals, etc., received each year. This report to be his receipt therefor. Now that there is an opportunity for securing a lodgment of the collections of the American Medical Association, and knowing the value of medical writings to the student, we suggest that medical men in any part of the country having duplications or books that they could spare for this collection, we wish them to make them into bundles and forward them to the collection of the American Medical Association in the Newberry Library, at Chicago.

Geo. W. Webster, M.D., *Librarian.*

Dr. R. Harvey Reed, of Mansfield, O., moved that the report be adopted.

Seconded and carried.

Dr. Albert L. Gihon, of New York, read the report of the Committee on Rush Monument, as follows:

REPORT OF THE RUSH MONUMENT COMMITTEE.

If it be permitted to refer to the projected monument to Benjamin Rush in technical language, especially appropriate at this time and place, your Committee feel that they can announce that the case is not entirely hopeless. In the light of the history of similar cases and in the opinion of wise and learned consultants, it is doing as well as can be expected. Your committee would be poor practitioners to admit that the resources of their art had been already wholly exhausted.

It is not necessary at this time to repeat what has been so often stated of the history of this undertaking, or to reiterate the reasons why a monument should be erected in commemoration of Dr. Benjamin Rush at the Capitol of the United States of America. After all that has been said and written on this subject, it would be discreditable to the intelligence of any member of the profession of Medicine in the United States to assume him ignorant of the claim of this superlatively great American physician to be honored not merely by American physicians but by every patriotic American citizen to that distant future, when all that shall remain of history shall be archaic legend.

Your committee, in reporting progress, begs to present the following encouraging contribution from an unexpected source.

REPORT OF CONTRIBUTION TO THE RUSH MONUMENT FUND FROM THE EXHIBITORS AT THE NASHVILLE MEETING OF THE AMERICAN MEDICAL ASSOCIATION, 1890.

As Chairman of the Committee of Exhibitors, at the Nashville meeting of the American Medical Association, I beg leave to report that the entire management of the exhibits was under the charge of Dr. J. Berrien Lindsley, by appointment from the Local Committee of Arrangements.

Dr. Lindsley was especially well qualified for this work by experience gained at similar meetings and months of previous correspondence and personal interviews by which he secured the entire confidence of the exhibitors. As a result of his efforts the attendance was large and the exhibition was a very creditable part of the welcome and entertainment arranged for the members of the American Medical Association, during the Nashville meeting, and all concerned were well satisfied.

Dr. Lindsley now holds a balance over all expenditures of three hundred dollars which he desires to contribute to the Rush Monument Fund, as from the exhibitors at the Nashville meeting of the Medical Association, 1890.

This ethical example of Dr. Lindfley in conveying the profits on space occupied by exhibitors to some meritable fund in their name, is, I am sure, most cordially appreciated as a precedent for the Committee who may follow Dr. Lindsley in this capacity.

Respectfully submitted, Wm. J. Evans,
Chairman Committee of Exhibitors.

Accordingly, on the 7th of March of this year, Dr. J. Berrien Lindsley, of Nashville, transferred to the Monument Fund the sum of $300 from this source. Public acknowledgment has been made in The Journal of the Association for the contribution of these generous exhibitors, whose splendid example, it is hoped, may induce others to do likewise.

On the 2d of June, 1891, the State Medical Society of Pennsylvania, which has already contributed $500 to the Monument Fund, passed a resolution that "a committee of one from each county represented in this Society be appointed by the President at this meeting, to whom shall be intrusted the method of enlisting the profession in the project as proposed by the American Medical Association in 1884, viz.: the erection of a monument in Washington City to the memory of Dr. Benjamin Rush, who, in all the varied positions of responsibility, whether as patriot, scholar, scientist, citizen, physician, teacher or philanthropist, ever evinced a courage of conviction, an honesty of purpose, which during his life endeared him to thousands of his countrymen, and now causes him to be remembered as one of the greatest citizens of Pennsylvania."

Dr. W. Murray Weidman, of Reading, Pa., Chairman of the Monument Committee in that State, prepared a book for each county committeeman in the fifty-six counties represented in the State Society. In the other eleven counties there is no medical organization. In these books were printed copies of the resolutions of the State Society, names of contributors, amounts contributed and specific instructions as to the manner of obtaining subscriptions in the several counties. On the 27th of May, Dr. Weidman reports as the result of the year's work the sum of $593 and "unless disappointed, we shall during the coming year make a better showing." He adds: "My expenses in prosecuting the work thus far throughout the State will not exceed $25."

Your Committee, consequently, feel justified in not losing hope of ultimate success. Should all the 1400 organized county medical societies of the United States do as well as these fifty-six in Pennsylvania, a statue would be assured not inferior to that of Professor Henry in the grounds of the Smithsonian Institution and National Museum at Washington—though not the imposing structure contemplated when your Committee took it for granted that at least one-half of the one hundred and six thousand medical men in the country would cheerfully contribute one dollar each to this end. Their expectations were not realized, nor later, when after the fashion of the Dutch auctioneer, they bid for a half-dollar to be inclosed in a coin-card in a prepaid envelope, addressed to the Treasurer supplied for the purpose. Notwithstanding these disappointments, your Committee are prepared to announce that the project shall not be abandoned, that a memorial shall be erected from the funds that may be collected after a proper period of longer waiting, that should these funds be not enough to erect a full length statue, a bust of heroic size or small as the necessities may require, shall at least be substituted. It is no longer a question of commemorating Doctor Benjamin Rush, but of the manner in which he shall be commemorated—whether the inscription "Erected by the Members of the Medical Profession in America" shall appear on the base of a mere bust, or upon the pedestal of a superb reproduction in bronze of Sully's painting of this grand old physician, which is one of the treasured possessions of the Pennsylvania Hospital. Your Committee felt when they received the following letter, a few months since, that the fraternal spirit, which prompted this offering from across the border justified them in attributing the memorial to the Medical profession in America.

"Please accept the inclosed ten dollars as a contribution to the Rush Memorial Fund, a slight but sincere token of respect from a Canadian and evidence of my sense of the oneness of our profession."

It only remains with the medical profession to elect whether their offering shall equal in liberality those which other professions have made to their great men, and your committee urgently appeal to their brother physicians each to do his share towards this accomplishment.

To the American Medical Association:

Gentlemen:—As Treasurer of the Rush Monument Committee, I have the honor to submit the following report.

RECEIPTS.

Bal. on hand, as per report of 1890. . .		$1,539.69
Received from various subscribers, viz:		
C. H. Apple, Lehigh Co., Pa	1 00	
W. B. Ansley, Indiana Co., Pa	1 00	
Amounts forwarded	2 00	$1,539 69
Amount Forwarded	2 00	$1,539 69
R. W. Allison, Allegheny Co., Pa	1 00	
G. W. Allen, Allegheny Co., Pa	1 00	
Sam'l Ayers, Allegheny Co., Pa	1 00	
Brainard Dis. Med. Soc., Ill	20 00	
Bergen Co. Med. Soc., N. J	10 00	
R. D. Barber, Cal	1 00	
W. H. Baldwin, Sacramento	1 00	
W. E. Briggs, Sacramento, Cal	1 00	
W. C. Bane, Pittsburg, Pa	1 00	
J. M. Batten, Pittsburg, Pa :	1 00	
Fred Blume, Allegheny, Pa	2 00	
N. W. Brown, Pittsburg, Pa	1 00	
J. J. Buchanan, Pittsburg, Pa	2 00	
J. C. Christy, Pittsburg, Pa	1 00	
H. H. Clark, Pittsburg, Pa	1 00	
E. M. Carr, Pipestone, Minn	1 00	
A. J. Cox, Tyler, Minn.	1 00	
A. H. Clark, Heron Lake, Minn	1 00	
C. O. Cooley, Madelia, Minn	1 00	
W. R. Clunis, Sacramento, Cal.	1 00	
J. T. Cass, W. Lebanon, Pa.	1 00	
L. S. Claggett, Blairsville, Pa	1 00	
W. W. Dawson, Cincinnati, O	5 00	
Theodore Diller, Allegheny Co. Pa.	1 00	
E W. Day, Allegheny Co., Pa	1 00	
A. G. Daggette, Pittsburg, Pa	1 00	
F. D. Davis, Pittsburg, Pa	1 00	
Joseph N. Dixon, Pittsburg, Pa, ...	10 00	
C. A. Duff, Pittsburg, Pa.	1 00	
J. M. Duff, Pittsburg, Pa.	1 00	
J. C. Dunn, Pittsburg, Pa.	2 00	
Chas. R. Earley, Ridgway, Pa.	5 00	
A. J. Eidman, Orefield, Pa.	1 00	
F. T. Edsall, Pittsburg, Pa.	1 00	
P. J. [illegible] Co., Pa.	1 00	
Karl [illegible] a	1 00	
W. R. [illegible] Cal.	1 00	
Louis Emanuel, Allegheny Co. Pa.	1 00	
Watt Foster, Allegheny Co., Pa	1 00	
W. S. Foster, Pittsburg, Pa.	1 00	
F. B. Francis, Edgarton, Minn.	1 00	
C. E. Fowler, Sacramento, Cal.	1 00	
C. A. Green, Windom, Minn	1 00	
Geo. G. Graham, Dixmont, Pa	1 00	
J. J. Green, Pittsburg, Pa	1 00	
J. A. Graham, Allegheny Co., Pa	1 00	
J. F. Hartigan, Washington, D. C	3 00	
F. W. Huntington, Sacramento, Cal	1 00	
M. E. Hornbeck, Lehigh Co., Pa	1 00	
J. F. Huff, Lehigh Co., Pa	1 00	
A. J. Kern, Lehigh Co., Pa	1 00	
R. C. King, Lehigh Co., Pa	1 00	
J. L. Harding, Indiana Co., Pa	1 00	
W. E. Hallock, Pittsburg, Pa	4 00	
W. A. Hincknan, Allegheny Co., Pa	1 00	
W. B. Henderson, Allegheny Co., Pa	1 00	
J. L. [illegible] Co., Pa	1 00	
E. B. [illegible], Pa	1 00	
H. W [illegible] Co., Pa . . .	3 00	
D. A. [illegible]	1 00	
G. W. Hiett, Pittsburg, Pa	1 00	
D. C. Huffman, Allegheny Co., Pa	1 00	
H. T. Jencks, Jasper, Minn	1 00	
C. Q. Jackson, Pittsburg, Pa	1 00	
S. B. J [illegible] Co., Pa	1 00	
W. E. [illegible] a	1 00	
C. R. J. Kallan, Heron, Minn	1 00	
F. Koeller, Pittsburg, Pa	1 00	
J. P. Klingensmith, Indiana Co., Pa	1 00	
J. B. Lindsley (Nashville Exhibits)	300 00	
H. A. Look, Pittsburg, Pa	1 00	
E. P. Logan, Allegheny Co., Pa	1 00	
J. C. Laugs, Pittsburg, Pa	2 00	
W. S. Larimer, Allegheny, Pa	1 00	
J. A. Lippincott, Pittsburg, Pa	5 00	
H. W. Merrill, Maywood, Ill	1 00	
Minn. State Med. Soc	25 00	
Mercer County Med. Soc., N. J	13 00	
Morris County Med. Soc., N. J	24 00	
J. H. Musser (collection), Philadelphia, Pa .	9 20	
F. W. McRae, Atlanta, Ga	2 00	
J. F. Miller, Lehigh Co., Pa	1 00	
J. W. Macfarland, Pittsburg, Pa	1 00	
Amount Forwarded	512 20	$1,539 69

Amount Forwarded	$512 20	$ 1,539 69
E. G. Matson, Pittsburg, Pa	1 00	
R. B. Mowry, Allegheny, Pa	1 00	
Jas. McCann, Pittsburg, Pa	5 00	
F. M. F. McKennan, Pittsburg, Pa	1 00	
E. B. Mathiot, Allegheny Co., Pa	1 00	
S. H. McKibben, Allegheny Co., Pa	1 00	
W. H. Mercer, Allegheny Co., Pa	1 00	
G. W. McNeil, Pittsburg, Pa	1 00	
C. B. Nichols, Sacramento, Cal	1 00	
New Jersey Med. Soc	25 00	
R. R. Pettitt, Dayton, O	1 00	
Pettis Co. Med. Soc., Mo	10 00	
J. H. Parkinson, Sacramento, Cal	1 00	
B. Pickard, Kans	1 00	
S. C. Plummer, Luverne, Minn	1 00	
Stuart Patterson, Pittsburg, Pa	1 00	
A. Pettit, Pittsburg, Pa	1 00	
F. W. Quick, Lehigh Co., Pa	1 00	
R. A. Reeve, Toronto, Canada	10 00	
W. H. Rowe, St. James, Minn	1 00	
L. L. Rewalt, Fulda, Minn	1 00	
W. A. Riegal, Lehigh Co., Pa	1 00	
A. F. Rutledge, Indiana Co., Pa	1 00	
S. M. Ross, Blair Co., Pa	1 00	
G. G. Rahauser, Pittsburg, Pa	1 00	
J. E. Rigg, Wilkinsburg, Pa.	1 00	
W. R. Robeson, Allegheny Co., Pa	1 00	
W. F. Robeson, Pittsburg, Pa	1 00	
J. M. Ryall, Pittsburg, Pa	1 00	
State Med. Soc. of Penn	300 00	
F. B. Sutliff, Sacramento, Cal	1 00	
Salem Co. Med. Soc., N. Y	5 00	
M. Sullivan, Adrian, Minn	1 00	
G. L. Simmons, Sacramento, Cal	1 00	
A. E. Spalding, Luverne, Minn	1 00	
G. L. Simmons, Sacramento, Cal	1 00	
F. A. Shearer, Lehigh Co., Pa	1 00	
L. A. Salade, Lehigh Co., Pa	1 00	
J. M. St. Clair, Indiana Co., Pa	1 00	
A. W, Schooley, Braddock, Pa	2 00	
F. W. Shaw, Pittsburg, Pa	2 00	
W. C. Shaw, Pittsburg, Pa	2 00	
G. M. Shillito, Allegheny, Pa	1 00	
E. H, Small, Pittsburg, Pa	1 00	
W. Snively, Pittsburg, Pa	1 00	
A. W. Speer, Pittsburg, Pa	2 00	
R. W. Stewart, Pittsburg, Pa	2 00	
W. S. Stewart, Braddock, Pa	1 00	
J. H. Telford, Windom, Minn	1 00	
W. J. Taylor, Pipestone, Minn	1 00	
Jas. Tyson, Philadelphia, Pa	5 00	
G. G. Tyrell, Sacramento, Cal	1 00	
W. V. M. Taylor, McKeesport, Pa	1 00	
J. D. Thomas, Pittsburg, Pa	2 00	
R. M. Tindle, Allegheny Co., Pa	2 00	
Thos. C. Van Fries, Indiana Co., Pa	1 00	
F. K. White, Allegheny Co.. Pa	1 00	
A. L. Walker, Mansfield Valley, Pa	1 00	
W. C. Wallace, Bonney, Pa	1 00	
X. O. Weider, Pittsburg, Pa	2 00	
W. Wakefield, Lake Benton, Minn	1 00	
W. S. Webb, Worthington, Minn	1 00	
Henry Wilson, Pipestone, Minn	1 00	
W. F. Ward, Sacramento, Cal	1 00	
W. H. Woolsey, Sacremento, Cal	1 00	
G. A. White, Sacramento, Cal	1 00	
F. J. Patterson, Allegheny Co., Pa	1 00	
W. J. Norris, Allegheny, Co., Pa	1 00	
M. D. Mc Kilvey, Pittsburg, Pa	1 00	
J. Guy McCandless, Pittsburg, Pa	1 00	
H. A. Zimmerman, Pittsburg, Pa	1 00	
R. W. Young, Lehigh Co., Pa	1 00	
J. B. Weida, Luzerne, Pa	1 00	
Med. Society of Carbon Co.. Pa	10 00	
D. C. Ainey, New Milford, Pa	1 00	
W. W. Fletcher, Susquehanna, Pa	1 00	
E. R. Gardner, Montrose, Pa	1 00	
C. A. Johnston, Hop Bottom, Pa	1 00	
W. J. Lowery, Harford, Pa	1 00	
A. E. Snyder, New Milford, Pa	1 00	
Hobart Allport, Philipsburg, Pa	1 00	
E. J. Burd, Snow Shoe, Pa	1 00	
Geo. S. Frank, Millheim, Pa	1 00	
Amount forwarded	$965 20	$ 1,539 69

Amount Forwarded	$965 20	$1,539 69
G. F. Hains, Bellefonte, Pa	1 00	
S. W. Harshberger, Port Matilda, Pa	1 00	
R. G. H. Hayes, Bellefonte, Pa	1 00	
August Hibler, Bellefonte, Pa	1 00	
J. L. Leibert, Bellefonte, Pa	1 00	
J. F. Weiras, Boalesburgh, Pa	1 00	
Yearick P. Gross, Centre Co., Pa	1 00	
J. A. Bachman, Maytown,	1 00	
W. Boardman, Lancaster, Pa	1 00	
M. L. Davis, Lancaster, Pa	1 00	
J. M. Dearer, Buck, Pa	1 00	
J. C. Detweiler, Lancaster, Pa	1 00	
M. W. Hurst, W. Erl, Pa	1 00	
J. G. Simpson, Washington, D. C	5 00	
E. J. Cowden, W. Warren, Pa	1 00	
M. S. Guth, Warren, Pa	1 00	
Wm. V. Hazeltine, Warren, Pa	1 00	
York Co. (Pa.), Med. Soc	5 00	
McKean Co. (Pa.,), Med. Soc.	10 00	
Schuylkill Co. (Pa.), Med. Co	25 00	
Westmoreland Co. (Pa.), Med. Soc	20 00	
A. A. Barton, Plains, Pa	1 00	
J. B. Crawford, Wilkesbarre, Pa	1 00	
W. H. Faulds, Luzerne, Pa	1 00	
A. G. Fell, Wilkesbarre, Pa	1 00	
O. F. Harvey, Wilkesbarre, Pa	1 00	
J. T. Howell, Wilkesbarre, Pa	1 00	
M. B. Hughes, Shickshinny, P	1 00	
T. A. James, Ashley, Pa	1 00	
C. P. Knapp, Wyoming, Pa	1 00	
H. Kunkel, Kingston. Pa	1 00	
W. R. Longshore, Hazelton, Pa	1 00	
D. W. Mears, Hazelton, Pa	1 00	
J. A. Murphy, Wilkesbarre, Pa	1 00	
W. S. Stewart, Wilkesbarre, Pa	1 00	
S. W. Trimmer, White Haven, Pa	1 00	
J. B. Kohler, New Holland, Pa	1 00	
B. Lehman, Leaman Place, Pa	1 00	
A. M. Miller, Bird in Hand, Pa	1 00	
H. A. Mowery, Marietta, Pa	1 00	
J. H. Musser, Lampeter, Pa	1 00	
P. J. Roebuck, Litiz, Pa	1 00	
G. R. Rohrer, Lancaster, Pa	1 00	
T. M. Rohrer, Quarryville, Pa	1 00	
J. H. Shewk, Litiz, Pa	1 00	
G. R. Welchans, Lancaster, Pa	1 00	
J. L. Zeigler, Mount Joy, Pa.	1 00	
J. P. Connelly, Williamsport, Pa	1 00	
Sidney Davis, Milton, Pa	1 00	
C. R. Earley, Ridgway, Pa	1 00	
A. P. Hull, Montgomery Station, Pa	1 00	
John A. Klump, Williamsport, Pa	1 00	
Thomas Lyon, Williamsport, Pa	1 00	
H, G. McCormick, Williamsport, Pa	1 00	
Geo. D. Nutt, Williamsport, Pa	1 00	
Thomas C. Rich, Williamsport, Pa	1 00	
Jean Saylor-Brown, Williamsport, Pa	1 00	
L. Schneider, Williamsport, Pa	1 00	
J. C. Stearns, Mifflinburgh, Pa	1 00	
Charles W. Youngsman, Williamsport, Pa	1 00	
Chester Co. Med. Society	20 00	
Wm. M. Guilford, Lebanon, Pa	1 00	
Total Subscriptions		$1,106.20
Collected by means of coin-cards		151.50
Total receipts		$2,797.39

DISBURSEMENTS.

Amount forwarded			$2,797.39
Mortgage on real estate	$ 2,000 00		
Commission and accrued interest on same	22 78	$2,022 78	
D. C. Patterson, postage, etc.		4 00	
E. Morrison & Co., stationery		1 50	
Gibson Bros. coin-cards and printing	91 80		
A. L. Gihon, clerk hire	4 00	95 80	
Judd & Detweiler, printing circulars		2 50	
A. L. Gihon, distributing circulars		2 00	
Amount Forwarded		$2,128 58	

Amount forwarded . .	$2,128 58	
W. M. Weidman, postage and stationary	22 00	
Total disbursements. . .		$2,150.58
Bal. cash on hand . . .		$646.81

The item "collected by means of coin-cards" is the only one requiring explanation or comment. The committee decided, after careful deliberation, to try to obtain coin subscriptions, and selected the city of Philadelphia as the field for the experiment. Cards similar to the one appended to this report, specially prepared for transmission of coin through the mails, were sent to every known member of the profession in Philadelphia, together with a circular of explanation, and an envelope stamped and addressed to the Treasurer. The plan involved considerable expense, but it seemed to the committee an experiment worthy of trial. They therefore attempted it, with the intention of making good to the fund any loss which a failure might involve. The total expense of the venture, for printing, postage, etc., was $95.80; the total amount received, $151.50, making a balance in favor of the experiment of $54.70. As the amounts contributed in this way were in nearly every case, fractional parts of a dollar, and were sent to the Treasurer generally without any indication as to the name or residence of the sender, it has seemed best to insert the whole amount thus collected as one item in the report. All of which is respectfully submitted.

De Witt C. Patterson, *Treasurer*.

On motion the report was adopted.

Dr. Dudley S. Reynolds, of Kentucky, offered the following preamble and resolution, which were adopted unanimously:

Whereas, The Association of American Medical Colleges has adopted *the following regulations, viz.: Article* III of the Constitution.

Section 1, Members of this Association shall require of all matriculants an English composition in the handwriting of the applicant of not less than two hundred words, an examination by a Committee of the Faculty, or other lawfully constituted Board of Examiners, in higher arithmetic, algebra, elementary physics and Latin prose.

Section 2. Graduates or matriculates of reputable colleges, or high schools of the first grade, or Normal schools established by State authority, or those who may have successfully passed the entrance examination provided by the statutes of the State of New York, shall be exempt from the requirements of Section 1.

Section 3. Students conditioned in one or more of the branches enumerated as requirements for matriculation, shall have time until the beginning of the second year to make up such deficiencies, provided, however, that students who fail in any of the required branches in this second examination shall not be admitted to a second course.

Section 4. Colleges granting final examination on elementary subjects to junior students, shall not issue certificates of such final examination, nor shall any member of this Association confer the degree of Doctor of Medicine upon any person who has not been first examined upon all the branches of the curriculum by the faculty of the College granting the degree.

Section 5. Candidates for the degree of Doctor of Medicine, shall have attended three courses of graded instruction of not less than six months each in three separate years.

Section 6. Students who have matriculated in any regular college prior to July 1, 1892, shall be exempted from these requirements.

Resolved, Therefore, that the American Medical Association most heartily endorses the efforts of the Association of American Medical Colleges to advance the cause of medical education, and demands of the medical colleges of the United States the adoption and observance of a standard of requirement which shall in no respect fall below the minimum standard of requirements adopted by the said college Association.

Dr. Millard, of Minneapolis, moved that the Secretary of the Association be instructed to furnish advanced copies of the preamble and resolution to every medical college and medical journal in the United States.

Seconded and carried.

The report of the Trustees of The Journal of the Association was read by the Secretary as follows:

To the President and members of the American Medical Association.

Gentlemen:—Your Board of Trustees have the honor to report that they have caused The Journal to be issued weekly throughout the year as heretofore, and that no instance of delay in its issue has occurred. At the Meeting of the Board held in Washington it was decided to appoint an Editor, and at the adjourned meeting of the Board held in Chicago, May 13, Dr. J. C. Culbertson of Cincinnati was appointed. He was immediately installed in the office and has now completed the year.

Meetings.—The Board found that the numerous questions to be acted upon, were too important to the interests of the Association to be postponed until the Annual Meeting, and they have therefore held several meetings during the year now closed. The first at Washington during the session of the Association, when in addition to routine business the question of an editor was considered. The second meeting was held in Chicago May 13, 1892, and in addition to the appointment of an editor, an investigation of the office and the affairs of The Journal was undertaken, and a radical change in the business methods was instituted.

The third meeting was held in St. Louis, Mo., October 15 and 16, 1891, on account of the meeting of the Mississipi Valley Medical Association being in session at that time and place, and it being considered for the interest of The Journal that the Board should meet as many of the members as practicable. At this meeting the arrearages belonging to last year were brought forward and authorized to be paid. These expenditures were largely on account of the expenses of an extra edition of 75,000 copies of The Journal that were printed at the time of the meeting of the Association, and which we were assured had been settled. At the meeting after due investigation the editor was directed to increase the schedule of advertising rates and they are now more than double the rates of former years.

The fourth meeting of the Board was held in Chicago, April 21 and 22, 1892. The Journal office was inspected and the accounts and vouchers examined, and routine business transacted. Measures were also taken looking to the more economical administration of the office.

Contemplated Changes.—It is contemplated to cease paying commissions for subscribers of The Journal. The Association owns The Journal and not The Journal the Association, and your Trustees are of the opinion that increased membership in the Association should be the ultimate object. Notwithstanding the payment of high commissions to persons engaged in the solicitation of new subscribers, the net gain in the subscription list for the year, has not been large, which shows clearly that the growth of The Journal from a commercial standpoint has been slow. The raising of the advertising rates has had the effect of increasing the income of The Journal so as to enable us to increase the size of the page and procure new type, which added largely to the expenses of the office. This enlargement of THE JOURNAL took place with the first number of the second volume for the year.

Your Trustees are of opinion that with the additional changes now contemplated, we shall be enabled to procure more suitable quarters for the office, which is now entirely inappropriate; and our funds will be sufficient to purchase a modern printing press at a cost of $2,400, and a folding machine at a cost of $650, so that THE JOURNAL for the next year, unless some unforeseen changes occur, will be printed complete from its own type, and its own machinery. The amount now paid private contractors for press work will pay for a new press in a single year.

Receipts and Expenditures.—The office receipts for the year have been $12,296.41, and from the Association treasurer, $18,171.92. Total amount available $30, 468.33, and the expenses $28,670.90. There has also been paid on account of last year's indebtedness $1,393.12. There is in the hands of the Board May 31, $1,797.43.

Respectfully submitted for the Board,
P. O. HOOPER, *President.*
JOHN B. HAMILTON, *Secretary.*

At the conclusion of the reading of the report, Dr. John H. Hollister, of Chicago, explained to the Association certain items in the report of the Trustees, which he thought, if uncorrected, would reflect on the past management of THE JOURNAL.

Dr. Hamilton replied that there was not the slightest intention on the part of the Trustees in any way to reflect upon Dr. Hollister's management. The Trustees had found several bills that they had supposed were paid, and appointed a committee to investigate the matter of indebtedness. The Trustees had found the bill of a paper firm amounting to $820 unpaid. There were other items which swelled the total to the amount stated in the report.

On motion the report was accepted.

The report of the Committee on the Jenner Centennial, Dr. J. M. Toner, of Washington, Chairman, was read by the Secretary as follows:

SUPPLEMENTAL REPORT OF THE COMMITTEE ON THE JENNER CENTENNIAL.

To the American Medical Association:—Your Committee appointed at the meeting in 1890 to consider the project of a Jenner Centennial, made a preliminary report in 1891, based upon views collected from specific inquiries addressed to leading physicians, in all the States, and whose answers were found to be nearly unanimous and very enthusiastic in favor of the measure, and reported accordingly.

The Committee, however, was, on motion, continued to further consider the subject, and recommend definite action to the consideration of the Association, at this meeting.

After much reflection and many conferences, oral and written, with medical men of sound views and of high scientific and professional attainments, we are confirmed in the opinion that it is eminently proper that special notice of the occasion should be taken by the American Medical Association; a body which so fully represents the profession of our country, should at this time take the necessary action and direct appropriate exercises to be had at its meeting in 1896, which shall in some degree express the abiding confidence of the medical profession in the protective power of vaccination against small-pox, as well as their unqualified gratitude to its discoverer.

To the end of giving directness and unity of action to the proposed Centennial, and to secure a comprehensive and a well considered programme for the occasion, we recommend that the Association resolve to devote one day of the session, during the meeting of 1896, to the consideration of *Jenner's discovery* of vaccination—the most perfect prophylactic known in medicine.

And that the present Committee be discharged and that a committee of five be appointed by the President of the Association, to be known as the "Committee on the Jenner Centennial," to take the whole matter under its supervision, and arrange all details and carry these resolutions into effect; adopt a suitable programme, select a eulogist, provide for papers, addresses and volunteer essays, and make due assignments of them. The programme, as far as practicable, should present the history of the discovery and its introduction into America, with the scientific basis upon which its protective powers depend, and the practical benefit it has proved and must continue to be to the world.

And that the meeting for the Centennial year be held in the City of Washington, where a large and instructive exhibit of the literature and graphic art relating to small-pox and vaccination can best be made, if desired, and that the time of the meeting be fixed to be as near May 14, 1896, as it is practicable; this being the day upon which Jenner made the crucial experiment of the inoculation of cow-pox matter from the hand of the milkmaid, Sarah Nelmes, as a prophylactic against the greatest of the plagues that have inflicted the human family.

We further recommend that such papers, addresses, and literary and scientific material as shall be presented in discussion before the Association, shall be reproduced in a handsome Centennial volume, to signalize before the world our respect for the greatest prophylactic achievement in and of all times. All of which is respectfully submitted by

J. M. TONER,
Chairman of the Committee.

Dr. Gihon then delivered the address on General Medicine. He took for his subject "Intellectual Progress in Medicine."

At the conclusion of the address a vote of thanks was extended to the doctor, and the address referred to the Committee on Publication.

Dr. H. B. Hemenway, of Illinois, offered the following resolution:

WHEREAS, In the resolution as offered by Dr. Gihon in general session Wednesday, June 8, did not as orally offered and as stated by our President include specific names of members; and

WHEREAS, The resolution committed to writing did include specific names, therefore be it

Resolved, That the Secretary of the Association be hereby ordered to expunge from the body of the said resolution all specific names of individuals.

Seconded by Dr. Truax, of New York.

Dr. Gihon stated that he was almost certain that he had mentioned names in the resolution.

It was then moved that the resolution of Dr. Hemenway be laid on the table, which was carried the result of the vote being 66 for tabling, and 5 against.

Dr. S. E. Hampton, of Kentucky, offered the following:

Resolved, 1. That a Section of Microscopy and Bacteriology be added to the list of Sections of this Association.

2. That members of this Association be requested to bring their microscopes and specimens with them to the annual meetings of this Association.

3. That the American Society of Microscopy be requested to hold its annual meetings at the same time and place of this Association and invited to join with the Section of Microscopy and Bacteriology of this Association when established for the purpose of stimulating interest in Microscopy as a proficient but much neglected means of diagnosis.

Dr. R. Harvey Reed, of Mansfield, O., moved that the resolutions be referred to the committee on Sections.

Seconded and carried.

On motion, the Association adjourned until Friday, 11 A.M.

JUNE 10—FOURTH GENERAL SESSION.

The Association met at 11 A.M., and was called to order by the President.

The Report of the Judicial Council was read by the Secretary as follows:

REPORT OF THE JUDICIAL COUNCIL IN THE MATTER OF THE PERMANENT SECRETARY'S REPORT REFERRED TO IT.

The report of the Permanent Secretary referred to the Judicial Council, points out the embarrassment of himself and the Treasurer in determining the sufficiency of the certificate when a physician seeks to join the American Medical Association as a member by application, the difficulty arising through their inability to determine whether or not the society whose officers make the certificate for the applicant is entitled to representation in the American Medical Association.

The Constitution makes the State the territorial unit for representation in the Association, and every delegate and member by application can only become such by presenting credentials from a State Society entitled to representation in the American Medical Association, or a County or District Society entitled to representation in such State Society.

Where a physician is appointed a delegate, or granted a certificate for membership by application from a society other than a State Society, the officers certifying to the appointment or granting the certificate shall also certify that the society of which they are officers is entitled to representation in a State Society with proper qualifications within whose jurisdiction it is, and no credentials of a delegate should entitle him to registration and no certificate of a physician for membership by application should be accepted, that does not certify to this fact.

N. S. DAVIS, *President*.

JAS. F. HIBBERD, *Secretary*.

REPORT OF THE JUDICIAL COUNCIL IN THE MATTER OF THE APPEAL OF DR. J. R. BRIGGS, OF TEXAS, FROM THE ACTION OF THE TEXAS STATE MEDICAL ASSOCIATION.

In this case appellant claims that the proceedings in the Texas State Medical Association, wherein he was tried by the Judicial Council and a resolution of expulsion reported by it to, and accepted by, the Association, were not in accordance with the Constitution and Laws of said Association regulating proeedings in cases where punishment is to follow onviction.

his Judicial Council having examined the Constin and Laws of the Texas State Medical Association, and heard the testimony offered by both appellant and appellee, find that the proceedings of the Texas State Medical Association from which Dr. J. R. Briggs appeals were not conducted according to its own laws and regulations.

The Judicial Council recommends that the Permanent Secretary transmit a copy of this finding to the Texas State Medical Association for such action as it may determine.

N. S. DAVIS, *President*,

JAS. F. HIBBERD, *Secretary*.

REPORT OF THE JUDICIAL COUNCIL IN THE MATTER OF ALLEGED PLAGIARISM REFERRED TO IT BY THE SECTION ON LARYNGOLOGY AND OTOLOGY.

The evidence submitted to the Judicial Council shows that Dr. Jonathan Wright, of Brooklyn, N. Y., read before the Kings County Medical Association, May 12, 1891, a paper entitled, "The Biology and Treatment of Atrophic Rhinitis," which was published in the *Medical Record*, August 15, 1891, and that a literal copy of the same paper, under the title of "How a General Practitioner may Treat Atrophic Rhinitis," was read before the Kansas State Medical Society May 4, 1892, as an original paper, by Dr. Hal Foster, of Kansas City, Mo., and published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 21, 1892. While the evidence establishes a case of plagiarism, it presents nothing further for the judgment of the Judicial Council, but permits it to suggest that the party or parties aggrieved can take action for the proper discipline of the offender by instituting proceedings against him in some medical society of which he is a member having primary jurisdiction in the premises.

N. S. DAVIS, *President*.

JAS. F. HIBBERD, *Secretary*.

The Secretary read the following resolutions from the Texas State Medical Association, which on motion were accepted, and ordered placed on file:

TO THE TEXAS STATE MEDICAL ASSOCIATION:

Gentlemen:—We, your Committee, to whom was referred the President's report and recommendations, respectfully report that we are heartily in accord with the paper, and recommend, *First*, that a committee of three be appointed to revise and codify our Constitution and By-Laws.

Second, we recommend the adoption of the following resolutions:

1. WHEREAS, The interests of the Public Health are, or should be, paramount to any other interest in the social politics of an enlightened government; and whereas said interests have obtained little or no official recognition from a national government and there is no recognized head of that department of an economy, and whereas all other interests have separate Bureaus or Departments with a chief honored with a seat in the President's Cabinet; and whereas, a memorial from the American Medical Association on this subject has been sent to Congress praying that a Bureau of Public Health be created with an executive head who shall rank as a Minister and have a voice in the Cabinet; and whereas, a bill has been introduced into the United States Senate embodying the subject matter of said memorial in detail.

Resolved, By the Texas State Medical Association in Convention at Tyler, Texas, April 26, 1892, that we most heartily endorse and cordially urge upon the attention of Congress the said memorial, in view of the importance of the interests involved and the great and manifold benefits which we believe will be secured to the people of the United States by the passage of such a law.

2. WHEREAS, The American Medical Association at the last meeting, held in Washington city, did by *viva voce* vote, repudiate the action of its nominating committee in the matter of selecting its next place of meeting from Hot Springs, Arkansas, to Detroit, Michigan.

Therefore, be it resolved by the Texas State Medical Association in convention at Tyler, Texas, April 28, 1892, that we learn of this action with regret; believing it to be detrimental to the best interests of organized medicine in general, and of the American Medical Association in particular.

Resolved, That this Association regards such action as unconstitutional and the precedent a bad one and that we hereby respectfully protest against its repetition.

Resolved, That the act of taking out of the hands of its Nominating Committee, the right and power of selecting the place of meeting, strikes at the fundamental principles of the organized law of that body, said nominating committee being, under its constitution, composed of delegates from all American medical organizations in a manner best calculated to make that representation uniform and just.

Resolved, That a copy of this resolution be furnished the General Secretary of the A.M.A., and that it be also published in the medical press.

Respectfully submitted,

E. P. Becton,
J. L. Cunningham,
W. H. Monday, M.D.

AMENDMENT TO THE CONSTITUTION.

Offered by Dr. C. A. L. Reed, of Cincinnati.

Resolved, That Article II, section of the regulations be amended, inserting after the words United States, the words "The Dominion of Canada, Labrador and Newfoundland," and that such other changes be made in the phraseology of the Regulations and By-Laws as to make the same conform to this contemplated enlarged jurisdiction of the Association.

According to the rules, laid over for one year.

Dr. I. N. Quimby, of New Jersey, stated that he offered the following amendment to the By-Laws last year, and which was properly before the Association, "That Thursday morning's General Session be omitted, and the time be devoted to Sectional work." He moved its adoption.

Dr. Hibberd, of Indiana, said that so many changes had been inaugurated during this meeting of the Association in regard to its future management, that he would suggest that the matter be allowed to lie in a state of active fermentation for another year, and that if it produced a good result in the shape of a ptomaine, that the Association then act on it.

Dr. Quimby accepted Dr. Hibberd's suggestion that it lay on the table for future consideration.

The Secretary then read the following amendments to the Constitution and By-Laws:

To amend Section VII of the Constitution, entitled "The General Business Committee," as follows: "It shall be the future duty of the General Business Committee to make and present the nominations for the officers of the Association and its Standing Committees, and recommend the time and place for the meeting of the Association."

Jno. Morris,
J. G. Kiernan.

According to the rules, laid over for one year.

AMENDMENT TO THE CONSTITUTION.

"The General Business Committee of the Association shall perform all duties hitherto performed by the Committee on Nominations, which is hereby abolished. All sections of the Constitution and By-Laws or parts thereof inconsistent with the amendment are hereby repealed."

Jas. G. Kiernan, Illinois,
John Morris, Maryland.

According to the rules, laid over for one year.

AMENDMENT TO THE CONSTITUTION.

To be known as Article VIII, entitled "The Code of Ethics."

"The relations of the physician to the patient, to the public and to the profession, require that he shall be of good moral character and, in his personal and professional conduct, without reproach. That he shall avoid pretense and notoriety; that he shall properly qualify himself for professional duty by broad and liberal studies in letters, sciences and arts; that he shall employ reasonable and reputable methods of practice: that he shall respect the laws of the State; that he shall encourage efficient means for the enlightenment of public opinion regarding the responsibilities of medical men, and the relation of the citizen to public health; for the cultivation and advancement of medical education; for the promotion of the interests, usefulness, and honor of the profession; for the emulation, consertive action and friendly intercourse among those engaged in it."

Substituting the Roman numerals IX for VIII.

All articles, by-laws and codes inconsistent with this amendment are hereby repealed.

Proposed by Dr. F. F. Dow.

According to the rules, laid over for one year.

Resolved, That on and after July 1, 1897, no one will be eligible to membership in the American Medical Association who has not studied medicine four years, and attended four annual courses of lectures of at least six months duration.

John H. Rauch.

Laid over for one year.

Proposed Amendment to By-Law No. XI, relating to the Judicial Council.

The second clause of paragraph three shall be amended to read as follows:

"The decisions of said council on all matters referred to it by the Association shall be reported at the earliest practicable moment and shall be final unless revised by the Association.

Signed,
Dr. F. F. Dow.

Laid over for one year.

AMENDMENT TO BY-LAWS.

Whereas, The constantly increasing number of papers on general surgical subjects presented each year at the Surgical Section of this Association, the reading and even restricted discussion of which prohibit the introduction of any considerable number of papers on strictly orthopædic subjects, which might not prove of universal interest to the general surgeon; and

Whereas, There are already a sufficient and rapidly increasing number of members of the Surgical Section of this Association specially interested in this branch of surgery to warrant it; therefore, be it

Resolved, To amend Article II of the By-Laws by the addition, under the heading "Sections" and after 11 "Materia Medica and Pharmacy," the following: 12, "Orthopædic Surgery."

Arthur B. Hosmer, M.D.. Chicago.

Laid over for one year.

The Secretary read the following resolutions:

The Section on Physiology and Dietetics, having duly considered and discussed Mr. Paddock's Pure Food and Drug Bill, now before the United States Congress; Therefore

Resolved, That the same is hereby endorsed, and that they strenuously urge its passage as a most important step in the direction of the health and welfare of the nation; be it further

Resolved, That this action be submitted to the consideration of the American Medical Association for its endorsement. A true copy.

Signed,
Ephraim Cutter, *Secretary*.

It was moved that the resolutions be adopted. Seconded.

The Secretary suggested that, inasmuch as a large number of the members of the Association had not an intelligent idea of the bill and its provisions, the Association be cautious in adopting the resolutions.

Dr. Foster Pratt, of Michigan, then moved that the resolutions be laid on the table until next year.

Seconded and carried.

Dr. R. Harvey Reed, of Mansfield, O., then read the report of the Committee on Incorporation, as follows:

Mr. President and Gentlemen of the Association: Your committee appointed at the last meeting of this Association to devise a plan of incorporation and report at this meeting, begs leave to make the following report:

The Chairman corresponded with each member of the committee during the early part of the year, sending the same letter to each member setting forth the objects of the Committee, and asking the members to give their opinion in writing regarding the question of incorporation. After receiving replies from each member of the committee excepting Dr. Watson, who was absent from home, the reply from each member of the committee was again sent to each member to read and add any further suggestions that might occur to him, in addition to what he had already said. Replies were received from each one and the entire correspondence will be found attached to this report and from which we base our recommendations and advice.

Whereas, This Association has had a prosperous existence of over forty years and during this time has been able to conduct all its business with promptness and dispatch without being encumbered with legal rights, and

Whereas, The incorporation of this Association would not only give it legal rights, but might be the means of embarassing it by trials before judicial tribunals, involving costs and possibly mortification, in addition to extra expense, which would legally bind its members by action of its board of directors, and instead of detracting from, and reducing the amount of its legislative work, it would only add to that already burdensome element of our Association. Be it therefore,

Resolved, That it is the sense of this committee that the matter of incorporation be delayed, for the present at least, and that the committee be continued, and that those persons, who may desire to have the Association incorporated communicate with the committee during the coming year, and give their reasons for the same.

Very respectfully submitted,
R. Harvey Reed, *Chairman.*
J. F. Hibberd,
Irving A. Watson,
N. S. Davis,
W. B. Atkinson,
W. T. Briggs,
W. K. Sheddan.

CORRESPONDENCE IN RELATION TO INCORPORATION.

65 Randolph St. Chicago, Ill., January 5, 1892.

R. Harvey Reed, M.D., *Chairman of Committee:*

Dear Sir:—In July last, I received a note from you informing me that I am a member of a committee to report on a *plan to incorporate the American Medical Association*, and requesting my views regarding the same. I acknowledged the receipt of your note and promised to give the subject further consideration in due time. Lest you might think I had forgotten my promise, I give you such suggestions as have been impressed upon my mind. First of all, I must acknowledge that I have been heretofore opposed to any legal incorporation of the Association and for the following reasons:

1. If you give the Association *legal status*, you also invest each member with *legal rights*, and almost every attempt to discipline a member will lead to appeals to *the courts of law*, involving costs and often the mortification of learning that our professional rules of ethics have no force in courts of law.

Without a legal status, all the business interests of the Association must be conducted, as heretofore, on the *personal responsibility of the parties conducting* it; and hence the will be pretty cautious to keep all expenditures within th income. But give it legal status, and those entrusted wit its business will speedily develop ambitious schemes fo more rapid enlargement of the JOURNAL, more *salaried* off cers, etc., etc., all on the plausible plea that it will result in larger income for the future, while each year will show only increased indebtedness, in the end to be liquidated by doubling the annual membership dues. Then, doubling th annual dues will rapidly diminish the membership.

All this is old fogy conservatism, perhaps you are ready to say. Very well, so be it; nevertheless it is the conservatism of fifty-five years of active study of the practical working of medical social organizations in this country.

However, if the Association must be incorporated so as t possess a *legal status*, on what basis can it be done most safely and beneficially? I would answer first, negatively: that the *Act* should not be based on the Judicial Council, nor on the Board of Trustees of THE JOURNAL. The first should never be diverted from its strictly *judicial functions;* and the latter should be strictly limited to the executive work of supervising the publications of the Association in accordance with the Constitution and By-Laws. Second, positively: The Association might be incorporated with the president, the vice-presidents, permanent secretary and the chairmen of the several Sections, and their successors in office as the corporators. Or perhaps require *each Section* to elect an executive committee of three members, one for one year, one two years, and one for three years, so one vacancy would occur each year and this to be filled by the retiring chairman o the Section. These several Section Executive Committees should constitute an Executive Council and let these be the *corporators* named in the act of incorporation.

Let these corporators be required to meet on or before the first day of each annual meeting of the Association and as often during the meeting as business should require. Require them to nominate the members of the Trustees for THE JOURNAL and perform all the other duties heretofore performed by the Committee on Nominations, thereby letting the latter become *obsolete*. Such a plan would give a body of *corporators*, three from each Section, and consequently representative of all interests in the Association sufficiently stable to prevent fickleness, and yet the *absolute change of one third* each year would effectually prevent its degenerating into a clique, or self-perpetuating body.

I think I would be willing to vote for such a plan of incorporation. What think you? If you have a better one send it to me, and oblige,

Yours truly,
N. S. Davis.

Richmond, Ind., January 13, 1892.

Mr. Harvey Reed, *Chairman.*

Dear Sir:—Your favor of the 11th inst., reached me to-da covering letter from Dr. Davis. I can hardly think Dr. Dav objections to the incorporation of the American Medic Association are well taken, but I have to confess that I do not see any positive benefit to accrue to the Association by becoming a corporate body, and unless there is some substantial good to come of such a measure it were a waste of talent and time to work up its details. Possibly there is something in connection with the management of THE JOURNAL that makes incorporation desirable, but I do not see what it is. I am ready to see anything that may offer as a substantial reason for our taking on a legal status, but as the matter now stands I should favor a report setting forth that there is nothing in the affairs of the Association calling for its incorporation.

If it be determined to incorporate, the next question to settle would be to determine whether to do so under a United States law or some State law. It seems to me not the best to incorporate under a State law, and there is not, I think, a United States statute available for incorporation on the plan suggested by Dr. Davis. And if it be possible to have Congress pass an act that will authorize such a legal organization as Dr. Davis outlines, I do not think our Association would favor it. You know how earnestly we have worked to have our Nominating Committee possess something of a permanent character, and notwithstanding the palpable desirableness of such a feature, the Association would have none of it, voting it down fiercely whenever and however brought up. This is the leading feature of Dr. Davis' proposed plan for incorporation and is valuable, but I think would not carry if submitted to a vote of the Association. However, if it be deemed best to incorporate I suppose the duty of the Committee would be to submit the very best plan it could concoct and let the Association modify it if it will not accept the best.

To me it appears that the Committee ought to consider the matter in hand in this order, viz.:

1. Determine whether or not it is desirable to incorporate?
2. If incorporate, shall it be done under a State or United States law?
3. If under State law, what State?
4. If under a United States statute, an existing one or a new one?
5. If to incorporate, work out the details of the best plan.

Personally, I do not see sufficient reason to favor incorporation, but if we should incorporate, I would favor a new United States statute, that would enable the Association to frame a fundamental constitution that would enable it to meet its highest possibilities.

Respectfully submitted,

Jas. F. Hibberd.

Williamsport, Tennessee, January 30, 1892.

R. Harvey Reed, M.D., *Chairman Committee:*

Dear Sir:—Some months ago I received a communication from you notifying me that I had been appointed as one of a committee by the American Medical Association to consider the advisability, to formulate a plan and devise means for the incorporation of the Association.

Owing to a protracted illness of myself, I had not been able to reply, though having given the subject much thought, when a few days since I received a second notice from you with the letter of Dr. N. S. Davis appended giving expression to his wise and mature opinions, to which I now do my best to reply, hoping you will not think me careless or indifferent for failing to reply to your former notice.

After much thought and reflection on the subject, I have reached the conclusion that it is very probable that the Association as it now exists is in a better condition than it would soon be if incorporated, for the reasons so ably expressed by Dr. Davis in the appended letter expressing his views in answer to your request to him.

But if incorporated, I should say we should be very careful that the corporators do not or be not allowed to degenerate to the low line of medical politicians or party cliques or rings to perpetuate themselves or some favorites in place and power, to control the Association and its manifold interests.

However, if the Association must be incorporated so as to give it a legal status, on what basis can it be done most safely and beneficially?

I would answer first, negatively, that as Dr. Davis suggests, the action should not be based on the Judicial Council nor on the Board of Trustees of The Journal, for the reasons he so cogently argues in his appended letter. I would also oppose the abolition of the Nominating Committee and allowing the corporators to act in its stead, as advocated by Dr. Davis in his plan. For by so doing and selecting the Board of Corporators, as suggested by him, the Association places the control of its workings in the hands of a body of which it only, according to his plan, elects one-third of the members constituting it annually, so two-thirds of them are elected for the body by previous meetings. So by such a course. as suggested by Dr. Davis, *it makes the elective* body for three consecutive years to elect the officers of the Association, the Trustees of The Journal, Judicial Council, and by virtue of the election of the Trustees of The Journal, this Board of Corporators would indirectly elect the Editor and Business Manager of The Journal, which course I fear in the future some time or other would bring about serious complications and bad results.

Second. Positively I think the better plan for naming or electing the corporators is to allow each State delegation from any State that has within its territory ten members of the American Medical Association to elect one member of this Board of Corporation, and all States having two hundred members of the American Medical Association to be entitled to elect two members of the Board of Corporators, and all States having more than two hundred members, one additional for every two hundred members or fraction thereof over one hundred. And that the different State delegations be required to elect the member or members of the Board of Corporators that *they* may be entitled to directly, at the same time they organize, elect their member of the Nominating Committee, and report the names so selected to the Permanent Secretary at the same time they report the name of their member of the Nominating Committee. I would also suggest that the Board of Corporators should be required to organize by electing one of their number as Chairman and one as Secretary, *on the same day* that they are selected. I would further suggest that the Board of Corporators be intrusted with the selection of the Trustees of The Journal, and all matters of contract for the Association and its general financial management. And that this Board be required to make a report to the Association, through their Chairman or Secretary, at the morning session of the first day of the meeting each year, and turn over to their successor as soon as they organize all property or papers in their possession as a Board. I would also suggest that the President, Vice-Presidents, Permanent Secretary and Treasurer be, by virtue of their honorable positions, ex-officio members of the Board of Corporators.

This Board of Corporators should be required to meet on the day preceding the first day of each annual meeting, and as often thereafter during the meeting as may be deemed necessary by the Association or the Chairman of the Board.

My reasons for this view I have not time nor space here to give without running this feeble reply to an interminable length. But I would be willing, I think, to vote for some such plan, and would ask you to consider my views as here poorly expressed. I hope you will get a full expression from all members of the Committee; as this is a matter in which the Committee as well as the Association had best to go carefully, or else we may get a "white elephant" on our hands.

If any one should suggest a better plan, I will most heartily support it. With greatest respect, I am sincerely yours,

W. K. Sheddan, M.D.

Nashville, Tenn., March 31, 1892.

Dear Doctor:—The pressure of business has caused me to neglect your letter. I must apologize for my disrespect.

In answer to your last I will say that I fully endorse Dr. Davis' letter. We have done pretty well for nearly half a century without incorporation, and should be very cautious and careful what articles of incorporation we adopt, if any. Yours truly,

W. T. Briggs.

Philadelphia, April 4, 1892.

Dr. R. Harvey Reed:

Dear Doctor:—From my long experience as Permanent Secretary of the Association, I have long wondered how we could be benefited by incorporation. This has often been urged upon me, but I never could see how it would aid us. When acting as Editor of the Transactions, which was my special work soon after my election as Secretary in 1864, the Committee on Publication was required yearly to give a formal agreement to the printer that would enable *him* to collect the cost if we did not find it in our Treasury.

After a few years, the Association was gotten into such a condition that this no longer annoyed us. You see how readily money is obtained now. Frankly, I do not see what good it will do us. As to disciplining our members, with such a diversity of laws in the States, that would be impossible, even if we could find any member or members who would undertake it. Keep it as it is. If, however, incorporation must be, some plan like that proposed by Dr. Davis would, I think, prove best. That was the plan adopted by our Pennsylvania State Medical Society.

Permit me to suggest that you place in the act of incorporation only those points which are the essence of the Association, and let all the rules or by-laws go under the head of By-laws. *O*therwise any needed changes might prove very difficult to make. Yours truly,

W. B. Atkinson.

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65 Randolph St., Chicago, Ill., April 19, 1892.

R. Harvey Reed, M.D.:

Dear Doctor:—Your letter is received and the accompanying replies from other members of your Committee on Incorporation of the American Medical Association.

From the tenor of these replies, I think you will be obliged to make a report directly against the policy of legal incorporation in any form; or else ask for a continuance of the Committee another year to perfect details. To have a legal corporate body, the member of which should be elected annually by the delegations present from each State in the same manner as they select members of the Nominating Committee, as proposed by one member of the Committee, would possess neither stability nor facility for deliberation. Indeed it would be equivalent to investing our present Nominating Committees with corporate powers. The more I study the subject, the more certain I am that the Association is safer and better without incorporation, than with it.

Yours truly,

N. S. Davis.

Richmond, Ind., April 25, 1892.

Dr. Harvey Reed, *Chairman:*

Dear Doctor:—Your letter accompanying the correspon-

Place of Meeting, 1893:—Milwaukee, Wisconsin, June, 1893.

Members of the Board of Trustees:—Dr. Alonzo Garcelon, Lewiston, Me.; Dr. Perry H. Millard, St. Paul, Minn.; Dr. W. C. Patterson, Washington, D. C.; Dr. Leartus Connor, Detroit, Mich.

Members of the Judicial Council:—Dr. N. S. Davis, Chicago, Ill.; Dr. A. Morgan Cartledge, Louisville, Ky.; Dr. H. D. Didama, Syracuse, N. Y.; Dr. John B. Roberts, Philadelphia, Pa.; Dr. John Morris, Baltimore, Md.; Dr. W. T. Briggs, Nashville, Tenn.; Dr. A. M. Emmert, Davenport, Iowa; Dr. C. W. Vorhees, Coldwater, Mich.; Dr. W. E. B. Davis, Rome, Ga.

Address on "General Medicine":—Dr. H. A. Hare, Philadelphia, Pa.

Address on "General Surgery":—Dr. Henry H. Mudd, St. Louis, Mo.

Address on "State Medicine":—Dr. Walter Wyman, Washington, D. C.

The following members of Section on "State Medicine:" Dr. J. B. Cowan, Tennessee; Dr. Charles B. Smith, Portland, Me.; Dr. H. G. McCormick, Williamsport, Pa.; Dr. Edward Bently, Little Rock, Ark.; Dr. S. P. Duffield, Detroit, Mich.; Dr. Robert Reyburn, Washington, D. C.; Dr. F. Peyre Porcher, Charleston, S. C.; Dr. R. C. Atkinson, St. Louis, Mo.; Dr. Munn, Denver, Col.; Dr. A. L. Carroll, New York City; Dr. Geo. H. Rohé, Baltimore, Md.; Dr. N. S. Davis, Jr., Chicago, Ill.; Dr. J. B. Baird, Atlanta, Ga.; Dr. H. W. Husten, Marine Hospital Service; Dr. J. B. Whiting, Milwaukee, Wis.; Dr. Barbee, West Virginia; Dr. S. K. Jackson, Virginia; Dr. W. G. Kiger, Brunswick, Miss.; Dr. G. P. Conn, Concord, N. H.; Dr. Clark Gapen, Omaha, Neb.; Dr. J. H. Hamilton, Vermont; Dr. W. L. Schenck, Topeka, Kas.; Dr. S. W. Roberts, San Francisco, Cal.; Dr. E. D. Leavitt, Butte, Montana; Dr. H. Mitchell, Asbury Park, N. J.; Dr. C. B. Belt, Massachusetts.

The following resolution offered by Dr. Dennison, of Colorado, was unanimously adopted:

Resolved, That the Committee on Nominations, having in mind the sentiments of President Marcy, expressed in his annual address, the improvement and worth of the Association Journal, and the broader representation of efficient medical men in the United States by this parent society, respectfully requests that a Committee of five on Revision of the Code of Ethics be further instructed to determine and report to this Association, for action thereon at its next annual meeting, such changes in our By-Laws or Constitution as in their judgment will properly liberalize the relations of this Association to the great body of the Medical Profession. Respectfully submitted,

B. A. WATSON, *Chairman of Committee.*

E. ST. CLAIR BEADLES, *Secretary.*

It was moved that the report be adopted as read. Seconded.

Dr. A. N. Bell, of New York, said that a year ago the Constitution and By-Laws were amended so as to drop out the large Committee on State Medicine, and he and a great many others had supposed that it was wiped out; that the Section on State Medicine was sufficient to supply its place.

Dr. Bishop, of New York, said the majority of the members were under the impression that there *was no such* Committee, but according to the report as read there *is* such a Committee. The most reasonable thing to do would be to eliminate that part of the report; that it was all nonsense to elect men to offices when the Association had no offices to put them in.

He therefore moved, as an amendment, that the report of the Nominating Committee be adopt except the part relating to members of Section on State Medicine.

The mover of the original motion accepted amendment. The motion as amended was then by the President and carried.

Dr. C. A. L. Reed, of Cincinnati, offered the following resolution:

Resolved, That the American Medical Association hereby tenders an invitation to the medical profession of the Dominion of Canada, Newfoundland and Labrador, through their respective medical organizations, to come into organic relation with the American Medical Association, and that the President be and he is hereby instructed to appoint a committee of five to confer with the representatives of medical organizations of the countries named with reference to carrying out the purposes of this resolution.

Adopted.

The Committee on Auditing Accounts of Rush Monument Committee respectfully asked to be allowed to report at the next meeting of the Association, on account of impossibility of bringing the Committee together in time to report this morning.

This extension of time was granted the Committee.

Dr. J. Berrien Lindsley, of Nashville, then delivered the address on State Medicine, selecting for his subject "The People and the Public Health Movement."

At the conclusion of the address the doctor was extended a vote of thanks and the paper referred to the Committee on Publication.

President Marcy then said: We have received the hospitalities of Detroit in a way which reflects great honor on the people of the city in which we have convened; some recognition of our magnificent reception should be rendered in a formal vote. The Chair awaits a formal recognition of it.

Dr. N. S. Davis, Chicago: I think some resolutions on that subject are being prepared, but are not quite written. While the resolutions are being prepared, I simply rise to add most emphatically my endorsement to the suggestions that have been made by the President, that we have been received in Detroit by its citizens, medical and non-medical, official and non-official, in the most liberal and hospitable manner, and all concerned in making preparations for our reception deserve our fullest thanks for the admirable manner in which they have arranged for our meeting, providing everything for our convenience as fully as the nature of things would permit, and assigning the committees places of meeting as well as the Sections. They have also put at our disposal means of conveyance for those we brought with us—the women, the essential part of our household. They have striven to give them a most cordial reception and entertainment, and to show them everything that is beautiful around this side of the Straits, and I am sure that none of us have language with which to adequately convey our appreciation of their efforts. (Applause.)

I have had the privilege of following this Association from its beginning all over our broad land. I have sat with it in the shade of Bunker Hill: I hav sat with it in the Golden Gate of the Pacific; I ha before been with it here and in the southern part the country and around the Eastern lakes; I been with it to the Gulf of Mexico in the South in various diagonal lines over the whole Union. (plause.) There is nothing in my whole heart gives me so much comfort of a temporal nature as feel that this Association in its migrations from year to year has a happy influence in commingling and making one people, one profession, one brotherhood, and I hope while time lasts the same molding, welding influence of brother with brother and male with female of our brotherhood will continue and that we shall enjoy these privileges in harmony throughout our broad country. We have now national and international congresses of medicine, and others are speedily to follow. Is there any other part of the community that has done as much glorious work in making the brotherhood of humanity as the medical profession to which we belong? (Loud applause.)

Dr. H. D. Didama, of New York: I read recently that Detroit was a city of 150,000 inhabitants situated on Lake Erie. We find on coming to this place that it is a large city with 250,000 inhabitants and not situated exactly on Lake Erie in New York. (Laughter.) I wish to say that this is a glorious city with broad streets and avenues, that it is worthy of the people who live here, and that the people from the highest to the lowest are worthy of the city in which this Association has met. I take great pleasure in endorsing all that Dr. Davis has said. He has said everything wisely and well. (Loud applause.)

Dr. Hibberd offered the following:

Resolved, That as this annual session of the Association is about to close, there comes over us such a sense of appreciation of the pleasure and profit we have received during our sojourn in Detroit, as to prompt us to express in such terms as we may our obligations to those who have so largely contributed to our enjoyment.

We tender sincerest thanks to Dr. H. O. Walker and his corps of intelligent, active and efficient assistants on the Committee of Arrangements for their untiring efforts to minister to our comforts, and congratulate them on their eminent success.

We present our warmest gratitude to those ladies and their husbands and assistants who entertained us in their beautiful homes. and to those other ladies who so assidiously devoted themselves to entertaining the ladies who accompanied us to this lovely city by pointing out its charms while we were engaged in the duties of the Association.

The daily press have our thanks for the full reports of our proceedings, and favors shown in the publication of notices of affairs for our information.

Railroads that brought us here have placed us under obligations for reduction shown us in transportation rates.

To all classes of people in Detroit with whom we have come in contact we acknowledge gratitude and offer thanks for the courteous manner in which we have been received and entertained.

To President Marcy and Secretary Atkinson and their assistants and coadjutors we extend most cordial expressions of thanks for the patient, admirable manner in which they have executed the exacting and wearying functions of their offices.

Resolved, unanimously that Detroit is a glorious city in which to hold an annual session of the American Medical Association.

The President then introduced Dr. Felix Formento, President of the American Public Health Association. Dr. Formento said that the prospects for the meeting of the American Public Health Association in the City of Mexico next November were very cheerful and encouraging. He had received a telegram from the City of Mexico, from the Chairman of the Committee of Arrangements, a gentleman of eminence and influence both politically and otherwise, and a particular friend of President Diaz, assuring members of a grand reception at the coming meeting. He said the railroads had considerably reduced their fares and that special cars would be provided for the members at the frontier to take them into the City of Mexico. He hoped that as many of the members who belonged to the American Medical Association and American Public Health Association would do all they possibly could to attend the meeting.

President Marcy: I feel that we ought to congratulate ourselves on this successful meeting both from a social and scientific point of view. The Sections have worked diligently and faithfully, early and late. It is true, some of our general sessions have been a little stormy, but as the storm cleared away, the thunder stopped roaring, and the lightning ceased to flash, the air was purified, and so the clouds broke away last night in the glory of the sunset that greeted us. I think it was in prophecy of this Association and in the glory of its successful meeting in this city. (Applause.)

I am reminded that Virginia has been called the "Mother of Presidents" of these United States, and one who was "first in war, first in peace, and first in the hearts of his countrymen," belongs to us in this great country just as much as to the city which gave him birth. You and I remember those times that were fraught with danger, with sorrow and suffering. We have with us a gentlemen who took a prominent and active part in that great work of both the North and the South—a work of mercy, of benevolence that grows with us in these times of peace. We feel that the American Medical Association knows no North, no South, no East, no West, and therefore I take pleasure in introducing to you your next President, Dr. Hunter McGuire, of Richmond, Virginia. (Loud applause.)

Dr. McGuire was enthusiastically received, and, when quiet was restored, spoke as follows:

Mr. President and Gentlemen of the American Medical Association: I desire simply to return my thanks for the distinguished honor you have conferred upon me in electing me the President of this great body; and I desire to return thanks to you, sir, for the kind and generous way in which you have been pleased to introduce me. I hope our meeting next year will be as successful as this has been. I can ask nothing more. I shall earnestly endeavor to make it so. I thank you. (Loud applause.)

There being no further business the Association, on motion, adjourned to meet in the "Cream City of the West," Milwaukee, Wisconsin, June, 1893.

W. B. Atkinson,
Permanent Secretary.

ABSTRACTS.

Quinine Lotion for the Scalp.—Physicians are frequently asked the best form for the application of quinine, in solution, as a hair-wash. The inquirers in so doing take it for granted that some form of quinine is a tonic for the hair: there is an undoubtedly strong popular opinion in that direction. Upon what basis, if any, of a scientific nature we are unable to declare. From the *Pharmaceutical Era* we quote the following combination that has been much used:

R. Sulphate of quinia, thirty grains.
Alcohol, two ounces,
Tinct. Cantharides, one drachm,
Tinct. Capsicum, one-half drachm,
Ammonia Water, one-half drachm,
Glycerine, one ounce,
Bay rum, three ounces. ṁ.
Sig. Apply daily.

Some persons will not bear well the third and fourth ingredients, in the quantities ordered. For young persons, it might be well to omit those items altogether.

The Mineral Waters of Texas.—According to the *Texas Sanitarian*, Dr. Everhart has directed attention to the various springs contained within that State. The time has come when a careful examination and tabulation of them should be made. The chalybeate springs are the best known at the present time, and have had some employment externally and internally, chiefly for cutaneous diseases, ulcers and anæmia. The salts of iron are not alone, but are joined with chloride of sodium, sulphate of soda, etc. Carbonic acid is abundant in some of them. Alum springs exist in several sections, especially in the vicinity of Franklin, Robertson County. Sulphate of soda or magnesia waters can be found near Georgetown. Valuable sulphur springs have for a long time had a more than local reputation at Lampasas.

Fracture of the Leg in an Atrophic Patient with Good Recovery.—At the Detroit Emergency Hospital recently they had under treatment "the skeleton giant," on account of a fracture of the bones of the leg. The *Reports* of that hospital state that the patient was forty years of age, resident of Providence, but known among the dime museums of the country as a leading freak. He was engaged at Detroit, when one day while pulling off his tights, after the exhibition, he fell with his right leg flexed under him. An oblique break of both bones of the right limb, at its lower third, was caused. The reduction was made within an hour after the injury.

The man had been the subject of progressive muscular atrophy during the past fifteen years. He is six feet and three inches in height, and at the time of the accident weighed not more than 110 pounds. The duration of treatment was ten weeks, after which the patient was discharged cured. The course of his convalescence was uneventful.

Methyl Blue and Methylene Blue.—The *American Druggist* states the differences that exist between these two preparations. They are not identical, although not a few physicians and pharmacists use the two terms interchangeably. Methyl blue is the sodium salt of the phenyl-para-rosaniline-sulphuric acid. *It is also known as methylblau and* other names in German. It is a dark blue powder soluble in water, forming a dark blue solution. Its alleged uses are antiseptic. It has been employed in diphtheria and some other zymotic affections. A mixture of two parts to 98 parts of pulverized sugar has been used topically in diphtheria; not without good results, it is claimed.

Methylene blue, or methylenblau, is a salt of tetra-methylamine. The double chloride of zinc and tetra-methylamine is the salt that is commonly met with in commerce under this name. According to Schultz, in *Chemie des Steinkohlentheers*, the simple hydrochlorate of the base is also on the market under the label of methylene blue. This has been used as an internal medicine in cases of rheumatism, in doses of three grains; also in paludal fevers; also as an analgesic, subcutaneously. In view of the fact that some of the so-called blues contain zinc, it is proper that medical men should be on their guard before prescribing this substance for internal use, and know whether or not a zinc salt is compounded.

From Dr. Squibb's *Ephemeris* for April, we quote the following remark concerning the use of terms that are so "hopelessly confusing to the practitioner:" "Rival manufacturers, eager to obtain predominant recognition, so manipulate terms that it is almost hopeless to get reliable clinical reports from the action of these various, but more or less similar agents." Dr. E. H. Squibb, the writer of the above reflection, refers to the methyl blue as an anal [illegible] and anæsthetic remedy rather than as an antisepti [illegible] rated by the writer of the *American Druggist* note; and further indicates that the two "blues" are not essentially different either in their general or in their therapeut [illegible] relations.

In the *Weiner Medicinische Presse*, the employment of methylene blue is albumenuria in reported by Netschajeff. Three cases of an acute character were favorably affected by half-grain doses of the drug, taken thrice daily. Diuresis was an invariable result on the second day, and a general improvement in other respects; recovery taking place on the ninth to the eighteenth day. The diuresis seems to be secondary to the bactericide action of the drug, for in cardiac dropsy no diuresis was obtained. The same was true in cases where an œdema of hepatic origin was treated by the methylene blue.

Flies as the Bearers of Contagion.—A Japanese bacteriologist, says the *Medical Press and Circular*, has made some investigations tending to show the *rôle* played by flies in the spread of infection. He finds that these ubiquitous insects may be one of the means by which tuberculosis and anthrax are disseminated. He believes that he has been able to trace the conveyance by them of microbic elements from infected human excreta, the odor of which is detected by flies at apparently vast distances; the bacilli have their vitality fully fostered amid the moist environment of the flies' alimentary canal. Infection of food-substances becomes the next step, which is in all probability effected by the lodgment of the bacilli having spores from the bowels of the flies as they rapidly flit from one object to another. These food substances, with the pathogenic fly-filth upon them, are next ingested by man, who if he is in a proper state of receptivity, absorbs and becomes infected by one or the other [illegible] his microbic enemies.

NECROLOGY.

Professor Carl S. F. Crede, the promulgator of the method of placental delivery, that bears his name, died March 30, aged seventy-three years. After having been engaged in minor teaching appointments for about fifteen years, he was promoted to succeed Jörg in the chair of obstetrics at the University of Leizig, in 1856. He continued in that position until 1887, when he was forced by ill-health to resign. He was an original investigator in the departments of medicine that interested him, and he brought into play not a few new methods and devices; but he will be always best remembered on account of his placental management, first published about 1860. He was for ten years or more the leading editor of the *Archiv für Gynæcologie*.

Dr. Isaac G. Porter, the senior physician in New London, Conn., died in the latter part of May. He was born at Waterbury, in 1806. He was educated in letters at Yale College, and in medicine at the University of Pennsylvania, at the latter in the year 1833, or over sixty years ago. All of his professional life was spent at New London. For several years, inclusive of the period of the last war, Dr. Porter was acting surgeon, U. S. A., and served as post surgeon at Fort Trumbull. He was an enthusiastic member of the Connecticut Medical Society, serving therein as its president in 1866 and 1867. His membership in the American Medical Association began in 1860. He was a frequent contriubtor to the *Transactions* of his State organizations and to the journals.

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SATURDAY, JUNE 25, 1892.

BY-LAW IV OF THE AMERICAN MEDICAL ASSOCIATION.

The Publication of Papers and Reports.

No report or other paper shall be entitled to publication in the volume for the year in which it shall be presented to the Association, unless it be placed in the hands of the Board of Trustees on or before the first day of July. It must also be so prepared as to require no material alteration or addition at the hands of its author.

Authors of papers are required to return their proofs within two weeks after their reception; otherwise they will be passed over and omitted from the volume.

Every paper received by this Association and ordered to be published, and all plates or other means of illustration, shall be considered *the exclusive* property of the Association, and shall be published and sold for the exclusive benefit of the Association.

The Board of Trustees shall have full discretionary power to omit from the published *Transactions*, in part or in whole, any paper that may be referred to it by the Association, or either of the Sections, unless specially instructed to the contrary by vote of the Association.

ADDRESSES AND

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Every line of which is doubly interesting, because of its importance, to those members who were not present on that occasion, and which we are fain to believe will cause the making of many vows, that they will be on hand at the next meeting.

MEDICAL EDITORS' ASSOCIATION.

At the meeting of this organization on the evening of June 4, the members were invited to partake of a sumptuous banquet at the Detroit Club by MR. GEO. S. DAVIS. The occasion was a most happy one, and will be long remembered by those of our guild who wield the pens that tell not of their own labors, but of *the achievements of those* who spend their days and nights in devising ways and means for alleviating pain and the healing of the diseases of their *fellow men*.

The menu was choice, the music charming, and the responses to toasts were veritable feasts of reason and flow of soul.

This organization of Medical Editors is a *most* valuable adjunct to the American Medical Association, as it is through it a true or false sentiment or impression is given in regard to *any and all professional* work.

Their coming together annually, to compare notes, receive and make suggestions, strengthens our current literature and benefits a whole profession.

THE AMERICAN ACADEMY OF MEDICINE.

This organization held its seventeenth annual meeting in Detroit, June 4 and 6.

The specific purpose and work of the Academy, is in the line of elevation of the preliminary educational training of those who intend to enter the medical profession. For a number of years the members were scarcely able to say there were many tangibl
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